Closest conjunct agreement is an illusion[*]

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Abstract

Much recent work on closest conjunct agreement has argued that Agree must be sensitive to linear order. In this paper, we argue that the 'closest' aspect of this phenomenon is in fact illusory. What may, at first glance, seem like linearly-conditioned agreement can instead be analyzed as the result of different derivations inside the conjunct phrase. Thus, what may seem like agreement with a single conjunct is in fact agreement with a conjunct phrase which has inherited the features of only one of its conjuncts. Furthermore, the assumption that a given order of operations inside the conjunct phrase is maintained at later cycles of the derivation makes correct predictions about the possibility for each pattern to occur either pre- or postverbally. Thus, we arrive at a principled analysis of conjunct agreement, which derives only the attested patterns in Serbo-Croatian and rules out ungrammatical structures without recourse to linear order.

1 Introduction

It is a well-known fact that languages employ various strategies for agreement with conjoined noun phrases. For instance, if we consider the following example from Serbo-Croatian, we see that the participle *prodati* ('sell') can show agreement in masculine gender, which seems to indicate agreement with the entire conjunct phrase. However, another possibility is agreement with the linearly closest conjunct, as the neuter form *prodata*, in this case (1).

(1)   [&P Sve haljine   i   sva odela]   su juče   prodati   / prodata.
           all dress.FPL and all suit.NPL are yesterday sell.PRT.MPL   sell.PRT.NPL
        'All dresses and all suits were sold yesterday.'

The existence of so-called 'Closest Conjunct Agreement' (CCA) poses a particular challenge for standard theories of Agree as it seems to be sensitive to linear proximity to the goal, rather than

c-command. In order to account for this fact, recent approaches either expand the mechanism of Agree to avoid violating Minimality (Bošković 2009) or extend some part of the agreement process to the phonological component, where notions of linear order are relevant (Bhatt & Walkow 2013; Walkow 2014; Marušič et al. 2015). On the basis of gender agreement in Serbo-Croatian (SC), we show how all patterns of apparent agreement with the linearly closest conjunct can be derived in syntax proper, without any explicit reference to linear order. We argue that, in most cases, what looks like Closest Conjunct Agreement can actually be viewed as agreement with an entire conjunct phrase that has inherited the features of only one of its conjuncts. This is derived by a system of feature percolation to &P that involves agreement between the & head and both conjuncts. A crucial assumption is that the order in which syntactic operations apply is in principle free and, depending on the order in which Agree and Merge apply, agreement with one of the conjuncts can fail. For example, if Agree is initiated before the second conjunct is merged, then the features of the second conjunct will not percolate to &P and will therefore not be available for agreement.

One of the core aspects of our analysis is the proposal that the order in which syntactic operations apply is directly responsible for the conjunct agreement in a given sentence. Furthermore, the order in which operations apply within the conjunct phrase to achieve (partial) feature percolation must be maintained at later cycles of the derivation (the *Uniform Order of Operations* hypothesis). As we will show, this constraint derives whether a particular agreement strategy is found with pre- or postverbal coordinate phrases, making the stipulation of an EPP-feature unnecessary. In general, the combination of these assumptions yields exactly the correct balance between having a system that is both flexible and restrictive enough to derive the patterns we find in Serbo-Croatian, and to rule out those that we do not.

In Section 2, we will discuss the basic patterns of conjunct agreement in Serbo-Croatian. Section 3 discusses two previous approaches to conjunct agreement in Slavic by Bošković (2009) and Marušič et al. (2015). Here, see that the more successful recent analyses such as (Marušič et al. 2015) require agreement to be sensitive to linear order and therefore also constitute part of PF. In Section 4, we develop an analysis of the Serbo-Croatian data that is situated entirely in Narrow Syntax. In addition to demonstrating the derivation of each pattern, we also provide an explicit mechanism for resolved agreement, which involves postsyntactic constraint-based impoverishment (Section 4.4.2). Section 5 discusses how this approach can be successfully extended to cases of 'sandwiched agreement' in Slovenian (Marušič et al. 2015), CCA with complementizer agreement in dialects of Dutch (van Koppen 2005) and conjunct agreement patterns in English. Finally, Section 6 concludes.

2 Patterns of conjunct agreement in Serbo-Croatian

The primary empirical focus of this paper is on the various strategies of gender agreement with conjoined NPs in Serbo-Croatian. We can identify the following patterns of conjunct agreement: Resolved Agreement (RA) (full agreement with both conjuncts), Closest Conjunct Agreement (CCA), which involves two subtypes: First Conjunct Agreement (FCA) (agreement with the first

conjunct in a postverbal subject), and Last Conjunct Agreement (LCA) (agreement with the last conjunct in a preverbal subject). Additionally, there is the pattern of Highest Conjunct Agreement (agreement with the first, hierarchically highest, conjunct in a preverbal subject), which was not identified in previous literature (Corbett 1991; Bošković 2009), but has since been experimentally confirmed in Slovenian (Marušič et al. 2015), and Bosnian/Croatian/Serbian (Willer-Gold et al. 2016). We present each pattern of gender agreement in the following section.[1]

2.1 Resolved Agreement

Resolved Agreement (RA) can be viewed as agreement with the entire conjunct phrase that somehow 'computes' or 'resolves' the individual features of its conjuncts (e.g. Corbett 2006; Franks & Willer-Gold 2014; Marušič et al. 2015; Despić 2016). Agreement can either be resolved if the gender features of the conjuncts match, or default masculine in the case of mismatches. Furthermore, Resolved Agreement is not restricted to either pre- or postverbal position. If we have conjoined feminine and neuter conjuncts, for example, then agreement in default masculine is preferred, as shown in (2) and (3).[2]

(2)　　[&P Okolnosti　　i　　vremena] su bili　　teški　　za sve stanovnike.
　　　　circumstance.FPL and time.NPL　are be.PRT.MPL difficult.MPL for all　inhabitants
　　　　'The circumstances and times were hard for all the inhabitants.'　　　　(*F+N=M*)

(3)　　Na stolu su stajali　　[&P pisma　　i　　koverte].
　　　　on desk are stand.MPL　　letter.NPL and envelope.FPL
　　　　'Letters and envelopes were lying on the desk.'　　　　(*M=N+F*)

With two masculine plural nouns, the participle shows agreement in masculine, which is ambiguous between the default and resolution of matching gender.

(4)　　[&P Računari　　i　　štampači] su kupljeni　　zajedno.
　　　　computer.MPL and printer.MPL are buy.PRT.MPL together
　　　　'Computers and printers were bought together.'　　　　(*M+M=M*)

In section 4.4.2, we propose a postsyntactic mechanism of resolution based on impoverishment. For now, it is important to bear in mind that resolution requires that the features of all conjuncts are taken into account.

2.2 Last Conjunct Agreement

Last Conjunct Agreement (LCA) is the pattern of Closest Conjunct Agreement in which the verb agrees with the second/last conjunct in a preverbal subject, as shown in (5) and (6).

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[1] For the most part, our examples involve inanimate, plural NPs since these consistently trigger plural agreement and do not show animacy-based interactions with gender agreement. Conjunction of singular NPs results in further puzzling restrictions, which we do not deal with here (but see Section 4.4.6 and Corbett 2006:256; Franks & Willer-Gold 2014:108 for discussion).

[2] However, Willer-Gold et al. (2016) report that default agreement with postverbal subjects is found far less frequently than with preverbal subjects. We have no particular explanation for this preference and treat both as possible options available to the grammar.

(5) [&P Sva odela i sve haljine] su juče prodate.
     all suit.NPL and all dress.FPL are yesterday sell.PRT.FPL
     'All suits and all dresses were sold yesterday.' (*N+F=F*)

(6) [&P Okolnosti i vremena] su bila teška za sve stanovnike.
     circumstance.FPL and time.NPL are be.PRT.NPL difficult.NPL for all inhabitants
     'The circumstances and times were hard for all the inhabitants.' (*F+N=N*)

However, it is important to note that agreement with the last conjunct of a postverbal conjunct phrase is impossible, as shown in (7).

(7) *Juče su prodate [&P sva odela i sve haljine].
     yesterday are sell.PRT.FPL all suits.NPL and all dresses.FPL
     'All suits and all dresses were sold yesterday.' (**F=N+F*)

Thus, this illicit strategy of *Lowest Conjunct Agreement* must be ruled out by a theory of conjunct agreement in Serbo-Croatian.

2.3 First Conjunct Agreement

First Conjunct Agreement (FCA) is the pattern of Closest Conjunct Agreement in which the verb agrees with the first conjunct of a postverbal conjunct phrase (8).

(8) Na stolu su stajala [&P pisma i koverte].
     on desk are stand.PRT.NPL letter.NPL and envelope.FPL
     'Letters and envelopes were lying on the desk.' (*N=N+F*)

Another strategy, preverbal FCA or *Highest Conjunct Agreement*, was not acknowledged in some earlier literature (e.g. Bošković 2009), but has recently been shown by Marušič et al. (2015) and Willer-Gold et al. (2016) to be a legitmate agreement strategy for a number of speakers. In (9), the verb agrees with the highest, i.e. first, conjunct in a preverbal &P.

(9) %[&P Koverte i pisma] su stajale na stolu.
     envelope.FPL and letter.NPL are stand.PRT.FPL on desk
     'Envelopes and letters were lying on the desk.' (*F+N=F*)

The existence of Highest Conjunct Agreement is puzzling since it constitutes agreement with the linearly furthest conjunct. However, this option is restricted to preverbal position, as we saw that the opposite pattern (Lowest Conjunct Agreement) is impossible (7).[3]

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[3]For example, the production study by Willer-Gold et al. (2016) found that, with N+F coordination, agreement with the linearly further conjunct preverbally (neuter) was produced 18% percent of the time, whereas the rate of agreement with the furthest conjunct in postverbal position (feminine) was only 2%.

2.4 Medial Conjunct Agreement

In cases where a subject &P consists of three conjuncts, speakers of Serbo-Croatian again employ the strategies of Resolved Agreement and Closest Conjunct Agreement described above. What is not possible, however, is agreement with the middle conjunct, or *Medial Conjunct Agreement*:

(10) [&P Haljine, odela i suknje] su juče prodate / *prodata /
     dress.FPL suit.NPL and skirt.FPL are yesterday sell.PRT.FPL sell.PRT.NPL
     prodati.
      sell.PRT.MPL
     'Dresses, suits and skirts were sold yesterday.'

(11) Juče su prodate / *prodata / prodati [&P haljine, odela i
     yesterday are sell.PRT.FPL sell.PRT.NPL sell.PRT.MPL dress.FPL suit.NPL and
     suknje].
     skirt.FPL
     'Dresses, suits and skirts were sold yesterday.'

Instances of feminine agreement in (10) and (11) reflect the Closest Conjunct Agreement strategies (First and Last Conjunct Agreement), while masculine reflects Resolved Agreement. Neuter agreement (agreement with the medial conjunct) is ungrammatical in both cases. The same patterns were recorded in the Marušič et al. (2015) experimental study on Slovenian and should also be excluded by any theory of conjunct agreement.

2.5 Data summary

The agreement patterns for conjoined NPs in Serbo-Croatian presented in the previous sections are summarized in the table in (12).

(12)   *Patterns of conjunct agreement in Serbo-Croatian:*

	PREVERBAL	POSTVERBAL
Resolved Agreement	✓	✓
First Conjunct Agreement	✓	✓
Last Conjunct Agreement	✓	✗
Medial Conjunct Agreement	✗	✗

This represents the basic patterns that a theory of conjunct agreement in Serbo-Croatian has to capture. As is clear from (12), a successful theory of CCA needs to be flexible enough to derive the five attested patterns, yet restrictive enough to rule out the three impossible ones. Furthermore, such a theory has to also account for the fact that, in a number of cases, agreement seems to target the linearly closest conjunct. In cases of LCA, it seems that the a probe has to skip the structurally closer conjunct, which inuitively violates principles of Minimality. Given that Agree is typically assumed to operate under hierarchical notions such as c-command, some theories opt to extend

the agreement process to PF, in order to give it access to information about linearity (e.g. Bhatt & Walkow 2013; Walkow 2014; Marušič et al. 2015). Lastly, many recent accounts do not provide a unified treatment of Resolved and Closest Conjunct Agreement (e.g. Bošković 2009; Bhatt & Walkow 2013; Marušič et al. 2015), that is, the former is derived by different theoretical means than the latter.

In the remainder of this paper, we develop a purely syntactic approach that addresses all of these challenges. Importantly, this approach derives the attested patterns in (13), whilst ruling out unattested ones such as postverbal LCA. Furthermore, it does so without explicit reference to linear order, meaning that agreement is confined to syntax proper. Finally, our analysis also provides a uniform account of all conjunct agreement phenomena, with both Resolved and Closest Conjunct Agreement being derived from the same basic principles.

3   Previous accounts of CCA

In previous literature, the phenomenon of conjunct agreement has been extensively studied. Various patterns have been reported for the following head-initial languages: Arabic (Aoun et al. 1994, 1999), Polish (Citko 2004), Dutch (van Koppen 2005, 2008), Slovenian (Marušič et al. 2007, 2015), Russian and (Serbo-)Croatian (Bošković 2009, 2010; Franks & Willer-Gold 2014; Aljović & Begović 2016; Čordalija et al. 2016; Willer-Gold et al. 2016). Conjunct agreement in head-final languages has been discussed for Hindi and Tsez by Benmamoun et al. (2010) and Hindi-Urdu by Bhatt & Walkow (2013). Most of the accounts of CCA are syntactic in nature, however a number of recent proposals have suggested that at least a part of the agreement process is carried out post-syntactically. In the following sections, we consider two recent proposals for Slavic conjunct agreement in detail: the entirely syntactic approach by Bošković (2009) and the analysis in Marušič et al. (2015) that is at least partly post-syntactic.

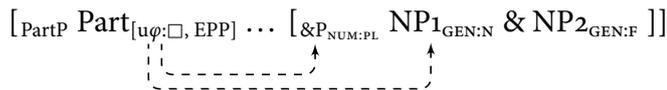### 3.1   Syntactic accounts: Bošković (2009)

One of the recent syntactic accounts that deals with conjunct agreement on the basis of data from Serbo-Croatian is presented in Bošković (2009), and extended to Russian in Bošković (2010). According to Bošković (2009), FCA and LCA result from interaction of the various sub-parts of the operation Agree (Chomsky 2000), which are assumed to constitute Probe, Match and Value. We will discuss Bošković's proposal on the basis of the FCA and LCA examples in (13) and (14).

(13)   [&P Sva odela   i   sve haljine]   su juče   prodate.
          all suits.NPL and all dresses.FPL are yesterday sell.PRT.FPL
          'All suits and all dresses were sold yesterday.'

(14)   Juče   su prodata   [&P sva odela   i   sve haljine].
          Yesterday are sell.PRT.NPL   all suits.NPL and all dresses.FPL
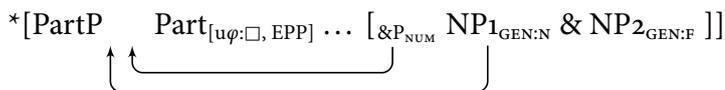   'All suits and all dresses were sold yesterday.'

Let us first consider the derivation of LCA in (13): It is assumed that the participle bears a single φ-probe that looks for both number and gender features of the noun (following Bejar 2003). Furthermore, features on lexical items are characterised as valued/unvalued and interpretable/uninterpretable in the spirit of Pesetsky & Torrego (2007). The process of Last Conjunct Agreement (13) proposed in this account proceeds following the steps in (15) through (18). First, the probe establishes a Match relation with &P for number and NP1 for gender (it enters into Multiple Agree; Hiraiwa 2001, Pesetsky & Torrego 2007).

(15)   *Step 1: Match with &P and NP1*

$[_{\text{PartP}} \text{Part}_{[u\varphi:\square,\ \text{EPP}]} \dots [_{\&P_{\text{NUM:PL}}} \text{NP1}_{\text{GEN:N}} \ \& \ \text{NP2}_{\text{GEN:F}}]]$

A crucial component of the LCA derivation is that the Part head also bears an EPP feature requiring Pied-Piping of the subject. However, Pied-Piping of the subject fails due to a kind of lethal ambiguity regarding the target for movement. In Serbo-Croatian, either &P or NP1 can be moved (the latter is a case of Left-Branch Extraction). Furthermore, both the maximal projection and the specifier of a phrase are assumed to count as equidistant to the probe (cf. McGinnis 2004; van Koppen 2005).

(16)   *Step 2: Ambiguity of target*

$^*[_{\text{PartP}} \quad \text{Part}_{[u\varphi:\square,\ \text{EPP}]} \dots [_{\&P_{\text{NUM}}} \text{NP1}_{\text{GEN:N}} \ \& \ \text{NP2}_{\text{GEN:F}}]]$

To prevent a crash due to lack of valuation, another cycle of Agree is instantiated. NP1 was deactivated as goal after the first Agree cycle, so now NP2 is the goal.

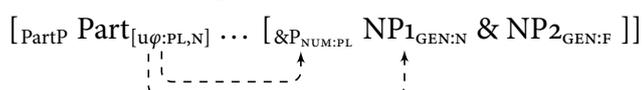(17)   *Step 3: Second cycle of Agree targets NP2*

$[_{\text{PartP}} \text{Part}_{[u\varphi:\text{F},\ \text{EPP}]} \dots [_{\&P_{\text{NUM}}} \text{NP1}_{\cancel{\text{GEN:N}}} \ \& \ \text{NP2}_{\text{GEN:F}}]]$

The probe bears an EPP feature. Since NP_2 cannot be extracted, the only option is to move the whole &P to subject position, which results in the LCA pattern.

(18)   *Step 4: Movement of &P*

$[_{\text{PartP}} [_{\&P_{\text{NUM:PL}}} \text{NP1}_{\cancel{\text{GEN:N}}} \ \& \ \text{NP2}_{\text{GEN:F}}] \ \text{Part}_{[u\varphi:\text{F},\ \cancel{\text{EPP}}]} \dots \text{t}_{\&P}]$

The FCA pattern in (14) is derived if Part does not bear an EPP-feature. In this scenario, the problematic step in (16) does not arise, since no movement is required. As a result, the participle agrees with the first conjunct in gender (N) and the &P in number (PL).

(19)   *First Conjunct Agreement*:

$[_{\text{PartP}} \text{Part}_{[u\varphi:\text{PL,N}]} \dots [_{\&P_{\text{NUM:PL}}} \text{NP1}_{\text{GEN:N}} \ \& \ \text{NP2}_{\text{GEN:F}}]]$

It should be clear that this account crucially rests on the optional presence of the triggering EPP feature in deriving LCA and FCA. However, one could argue that there is not any particularly convincing evidence for the EPP feature in Serbo-Croatian (or even in general, e.g. Bošković 2002). Furthermore, default masculine agreement is assumed to result from the Pied-Piping dilemma outlined above. Bošković (2009:472) suggests that there are two options to resolve the dilemma: either default agreement or Secondary Agree (deriving LCA). If this were the trigger for default masculine, however, then we would only expect to find it with preverbal conjunct phrases, since lethal ambiguity only arises if Part has an EPP feature. In general, it seems that Bošković (2009) wants default masculine to also be an option that is generally available, but does not provide an explicit proposal.

Aside from these conceptual objections, this account faces a more serious empirical problem. First, since the distinction between FCA and LCA is crucially linked to movement, we would not expect to find agreement with the first conjunct in a preverbal &P. This is because a derivation in which &P moves always results in the Pied-Piping dilemma above. This account therefore makes the clear prediction that preverbal FCA should be impossible. Although Bošković (2009:458f.) deems such examples ungrammatical, recent empirical work has shown that it is a legimate agreement strategy for speakers of Slovenian (Marušič et al. 2015) and Serbo-Croatian (Willer-Gold et al. 2016), cf. (9). Furthermore, Bošković (2009) does not discuss the predictions of his analysis for coordinate structures with multiple conjuncts. As we saw in section 2.4, agreement with the second of three conjuncts is ungrammatical (20).

(20)   *[&P Haljine, odela   i   suknje] su juče   prodata.
         dress.FPL suit.NPL and skirt.FPL are yesterday sell.PRT.NPL
         'Dresses, suits and skirts were sold yesterday.'

However, given the mechanism for deriving LCA, we would expect agreement to target the second conjunct. In the derivation of (20), the Part head bears an EPP feature to ensure that &P surfaces preverbally. The familiar Pied-Piping dilemma arises and valuation fails (21).

(21) $[_{\text{PartP}}$ Part$_{[u\varphi:\text{PL, EPP}]}$ ... $[_{\&\text{P}_{\text{NUM:PL}}}$ NP1$_{\text{GEN:F}}$ & NP2$_{\text{GEN:N}}$ & NP3$_{\text{GEN:F}}$]]

As in the derivation of LCA, a second cycle of Agree is instantiated and targets the next closest goal. Since the middle conjunct cannot be extracted, no ambiguity arises and this NP can provide a value for Part (22).[4]

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[4]Bošković (2009:474) claims that this is not the case, since (assuming the multiple-specifier structure in (i)) 'every NP in Spec&P in principle counts as a potential pied-piper'. As a result, they will be deactivated and only the last conjunct can be targetted for Agree.

(i) $[_{\&\text{P}}$ NP$_1$ $[_{\&'}$ NP$_2$ $[_{\&'}$ & NP$_3$]]]

However, this is at odds with the core assumptions of the analysis, since the movement dilemma and concomitant deactivation only arises if a conjunct is extractable. Unlike first conjuncts, medial conjuncts cannot be extracted (cf. Stjepanović 1999, 2015) and as a result, there should actually be nothing wrong with agreeing with the second of three conjuncts. Furthermore, it is conceivable that coordinations of more than two conjuncts do not necessarily involve multiple specifiers of a single & head (see section 4.5 for discussion).

(22) $[_{\text{PartP}}\,\text{Part}_{[u\varphi:\text{PL,N, EPP}]} \ldots [_{\&P_{\text{NUM}}}\,\text{NP1}_{\text{GEN:F}}\,\&\,\text{NP2}_{\text{GEN:N}}\,\&\,\text{NP3}_{\text{GEN:F}}\,]]$

Subsequently, the entire &P is pied-piped to Spec-PartP (23).

(23) $[_{\text{PartP}}\,[_{\&P_{\text{NUM}}}\,\text{NP1}_{\text{GEN:F}}\,\&\,\text{NP2}_{\text{GEN:PL,N}}\,\&\,\text{NP3}_{\text{GEN:F}}\,]\,\text{Part}_{[u\varphi:\text{N, } \cancel{\text{EPP}}]} \ldots t_{\&P}]$

Thus, Bošković's analysis clearly predicts that medial conjunct agreement should be possible in preverbal position, contrary to fact. In fact, it even seems to be impossible to derive the attested pattern of preverbal LCA in these cases.

In general, Bošković's (2009) account can derive the basic distinction between LCA and FCA, but struggles once a broader range of patterns are examined.[5] Nevertheless, we agree with the spirit of his approach, as what looks like linearity-sensitive agreement is derived in the syntax without reference to linear order. As we will see in the following section, another type of approach does in fact build some notion of linearity into the system of agreement.

3.2 Postsyntactic accounts: Marušič et al. (2015)

Another recent account of conjunct agreement proposed by Marušič et al. (2015) argues that part of the agreement process can be carried out post-syntactically. On the basis of experimental evidence from Slovenian, they identify the same three conjunct agreement strategies that we find in Serbo-Croatian: agreement with the closest conjunct, agreement with the highest conjunct, and agreement with the entire &P:

(24) $[_{\&P}$ Krave   in   teleta]   so odšla   / odšle   / odšli   na pašo.
          cow.FPL and calf.NPL are go.PRT.NPL   go.PRT.FPL   go.PRT.MPL on graze
          'Cows and calves went grazing.'

(*Slovenian*; Marušič et al. 2015:52)

In their account, the conjunct phrase &P (or Bool(ean)P in their terms, cf. Munn 1993) computes a value for number based on the values of its respective conjuncts. Agreement in number is then

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[5]In addition, given that Bošković's account crucially relies on the fact that the first conjunct can, in principle, be extracted, there is no discussion of what actually happens if this conjunct is extracted. Although the empirical situation with extraction and agreement is still unclear, there has been some initial work by Arsenijević et al. (2015). They found that, in the configuration in (i), speakers allow for all agreement strategies (resolved and agreement with either conjunct):

(i)   Haljine₁ su davno $[_{\&P}\,t_1$ i   odela]   izašle   / izašla   / izašli   iz
        dress.FPL are before.long   and suits.NPL get.out.PRT.FPL / get.out.PRT.NPL / get.out.PRT.MPL from
        mode.
        fashion
   'Dresses and suits got out of fashion long time ago.'   (*HCA / LCA / RA*)

In Bošković's system, it seems impossible to agree with one conjunct but extract another, since the two processes are inextricably linked. In our analysis (and others such Marušič et al. 2015), the determination of which conjunct is extracted is separate from the choice of agreement controller. For reasons of space and empirical murkiness, we do not present a detailed analysis of the interaction between putative CSC violations and agreement, however this is an important direction for future research.

always with the conjunct phrase. On the other hand, Marušič et al. (2015:57) assume that &P is unable to compute its own gender value. As a result, when the participle tries to agree in gender with the conjunct phrase, there are two possible options: either it selects one of the conjuncts to agree with, or inserts a default gender value (masculine). Marušič et al. (2015) assume that these two options correspond to two possible grammars which speakers of Slovenian can use. On of these is what they call a *No-Peeking* grammar that does not allow a head to probe inside the conjunct phrase, even if it does not bear a value (this could perhaps be viewed as a a kind of defective intervention, see Bhatt & Walkow 2013:974). As a result, default masculine value is inserted onto the conjunct phrase and opting for this grammar deterministically results in Resolved Agreement.

The variable strategies of agreement with a single conjunct come from choosing a grammar with a preference for No Default rather than No Peeking. If the option for default agreement is disfavoured, then one of the conjuncts must privileged for agreement. It is assumed that the grammar targets the 'closest' conjunct, however this depends on whether the notion of closeness is linear or hierarchical. As Marušič et al. (2015:61) point out, 'whether the closest conjunct is the first (hierarchically closest) or the second (linearly closest) conjunct depends on the relevant timing of Agree and conjunct flattening under linearization'. To achieve this flexibilty, Marušič et al. (2015) assume that Agree is split into two steps: *Agree-Link* and *Agree-Copy* (cf. Arregi & Nevins 2012; Bhatt & Walkow 2013; Smith 2015). The first step, Agree-Link, takes place in the syntax and establishes a link between the probe and goal, but does not transfer values. This happens during the second step, Agree-Copy, which takes place at PF. Since the latter is a PF processes, it can potentially follow other PF operations such as linearization. For example, if we have a preverbal conjunct phrase, then choosing the closest goal based on a hierarchical structure results in agreement with the first conjunct, i.e. Highest Conjunct Agreement (25). On the other hand, if the structure has been linearized before Agree-Copy takes place, then closeness is defined by linearity and the second conjunct will be chosen, yielding Last Conjunct Agreement (26).

(25)   *Pre-linearization (HCA)*:
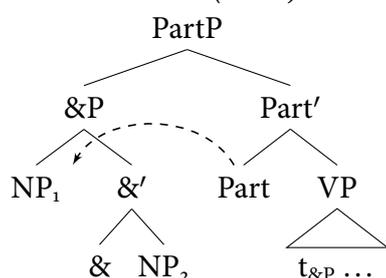
(26)   *Post-linearization (LCA)*:
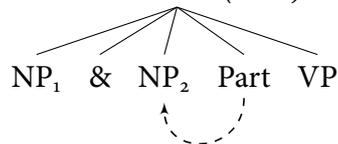
With postverbal conjunct phrases, agreement with the closest goal is not affected by whether Agree-Copy applies pre- or post-linearization. In both linear and hierarchical terms, the first conjunct is the closest as in (27) and (28). Crucially, this rules out the unattested pattern of postverbal LCA.

(27)   *Pre-linearization (FCA):*
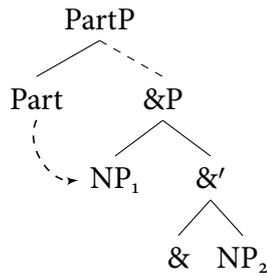
(28)   *Post-linearization (FCA):*
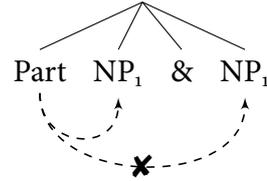
This account is empirically successful and can derive the correct patterns for both Slovenian and Serbo-Croatian. However, there are some conceptual issues with the process of agreement after linearization. In general, linear-oriented accounts of CCA have to say something about the fact one does not always simply 'agree with the linearly closest conjunct' (Marušič et al. 2015:60). A naïve interpretation of this statement would predict LCA with postnominal modifiers (29), since these NPs qualify as linearly closer.

(29)   [Crteži   na kojima su šume]   i   [slike   na kojima su jezera]   su
          drawing.MPL on which are forest.FPL and painting.FPL on which are lake.NPL are
        prodate   / *prodata.
        sell.PRT.FPL   sell.PRT.NPL
        'Drawings of forests and pictures of lakes were sold.'

The impossibility of agreement with the linearly closest NP in (29) must be viewed as a constraint on the syntactic operation Agree-Link in a 'Peeking' grammar, which cannot then simply establish links with all the NPs inside the conjunct phrase (as &P does in Bhatt & Walkow 2013).[6] Instead, Agree-Link must be a version of multiple Agree sensitive to regular syntactic notions, and the transfer mechanism Agree-Copy must be sensitive to both linear and hierarchical notions of locality. This duplication across interfaces is related to the general tendency in recent research that shifts recalcitrant syntactic phenomena to PF, e.g. head movement (Chomsky 1995; Merchant 2001; Schloorlemmer & Temmerman 2012; Platzack 2013), extraposition (Chomsky 1986a; Rochemont 1985; Truckenbrodt 1995) and case and agreement (McFadden 2004; Bobaljik 2008; Baker & Kramer 2014). While this move may be warranted in some cases, it should first be demonstrated that a purely syntactic account is not tenable. In the remainder of this paper, we pursue exactly this goal for conjunct agreement. We will show how all and only the attested patterns of CCA can be derived in Narrow Syntax by allowing &P to inherit the gender features of only one of its conjuncts. Thus agreement with the &P can give the illusory impression of agreement with a single conjunct.

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[6]We have not addressed the account by Bhatt & Walkow (2013) in detail here. Overall, their account aims to derive the fact that CCA is only possible with object agreement in Hindi and many aspects of their account are not obviously applicable to Serbo-Croatian. However, they do briefly discuss parallels with Serbo-Croatian (Bhatt & Walkow 2013:100of.). In particular, they argue that strategies of CCA arise because 'T cannot value its features on &P in Serbo-Croatian because of the failure of resolution of gender features in &P'. The general idea is that CCA arises in both Serbo-Croatian and Hindi due to the inaccessibility of gender features on &P, but for different reasons: in Hindi, the features on object &P are deactivated under case assignment, whereas in Serbo-Croatian, &P does not have a value for gender to begin with. However, this explanation is unsatisfactory for Serbo-Croatian since it is clear

4 Analysis

4.1 Theoretical assumptions

4.1.1 Clause structure

We assume an asymmetric structure for the coordinate phrase, i.e. an &P projection selecting a conjunct as its specifier and complement respectively (Munn 1987, 1993; Larson 1990; Zoerner 1995; Johannessen 1998; Weisser 2015, see also section 4.5 for the structure of coordinations with more than two conjuncts). For nominal coordination in Serbo-Croatian, the & head bears two c-selectional features for NPs, notated as [●N●].[7] Furthermore, the & head bears an 'articulated' probe for φ-features, containing distinct features for number ([#:□]) and gender ([γ:□]) (cf. Picallo 1991; Antón-Méndez et al. 2002; Bejar 2003; Carminati 2005; Preminger 2014). The gender value of &P is 'computed' under Agree, that is, & agrees with both its complement and specifier, thereby inheriting two (possibly distinct) values. On the other hand, we assume that the number value of the number feature on & is prespecified as PLURAL in Serbo-Croatian (see Despić 2016:4 for the same assumption, also cf. Marušič et al. 2015). The reason for this is that the coordination of two singulars or a mixed instance of singular and plural results in plural in most cases where the verb agrees with the conjunct phrase (however, see section 4.4.6 for an exception).[8] The structure of &P is given in (30).

---

that &P can and does compute its own gender to derive default masculine. Thus, it remains puzzling as to why &P does not compute its own gender in those instances in which we find CCA (the explanation clearly cannot be the same as for Hindi since there is no subject/object asymmetry). Thus, Bhatt & Walkow's (2013:1001) claim that 'CCA is not an option that languages choose instead of resolved agreement, rather it is a repair that arises when some aspect of syntactic agreement with &P fails' cannot be maintained if one is not explicit about why gender resolution is blocked in certain cases and not others. In our approach, we follow Marušič et al. (2015) in assuming that resolved agreement is in fact a viable option alongside CCA and that this variability is linked to some parametric property of the grammar.

[7]We follow work by Bošković (2008), Despić (2013) and Runić (2014) a.o. in assuming that Serbo-Croatian does not project a DP layer (although see Progovac 1998; Stanković 2014 for arguments for the opposing view). However, nothing in our analysis hinges on this assumption.

[8]However, this may not necessarily be the case for all Slavic languages. For example, Slovenian shows dual agreement with conjoined singulars (i).

(i)   Milka   in njeno tele   sta   bila   zunaj.
          Milka.FSG and her.NSG calf.NSG be.DU be.PRT.MDU outside
          'Milka and her calf were outside.'   (Priestly 1993:433)

Thus, it seems reasonable to assume that Slovenian does agree with each of its conjuncts in number, as well as gender. We leave the exact degree of parametric variation to future research.

(30)

```
                    &P
               ┌─────┴──────┐
             NP₁            &′
          dressesF      ┌────┴─────┐
                        &          NP₂
                       and        suitsN
                      ⎡ #:PL  ⎤
                      ⎣ γ:□,□ ⎦
```

As for the clausal spine, we observe that in Serbo-Croatian both the participle and the auxiliary show agreement in number, whereas only the former shows gender agreement.

(31)   Marija je   kupila   knjigu.
       Mary   be.3SG buy.PRT.FSG book
       'Mary bought a book.'

This is reflected by the relevant features on the relevant heads. We assume that the participle heads a Part projection (Bošković 1997; Bošković 2009; Adger 2003; Migdalski 2003, 2008) and carries probes for number and gender. The auxiliary, which we assume to be in T, only bears a probe for number and person features (which will be omitted in what follows). An example of agreement with a post-verbal (conjoined) subject is given in (32).

(32)

```
                    TP
              ┌──────┴───────┐
              T             PartP
            [#:□]        ┌────┴──────┐
                        Part         vP
                      ⎡ #:□ ⎤    ┌────┴────┐
                      ⎣ γ:□ ⎦   &P         v′
                                 △      ┌───┴───┐
                                ...     v       VP
                                                △
                                               ...
```

As we will see in following sections, the possibility for a pre-verbal subject, that is movement to Spec-TP, is not triggered by a formal feature such as the EPP on T.

4.1.2   Simplex vs. complex probes

We posit an important distinction between two types of probe. Since the gender probe on & will, in the default case, agree with both of its arguments, it must be able to participate in two cycles of Agree and host the relevant values acquired. We represent this with the notation $[\gamma{:}\square,\square]$ (following Assmann et al. 2014). Each of these boxes represents an 'agreement slot', which hosts a complex value that is a 'bundle of binary features' (Assmann et al. 2014:459). On the other hand, the gender feature on the Part head only agrees with a single argument, i.e. the subject, and therefore only has one agreement slot ($[\gamma{:}\square]$). It is important to bear in mind that these values

can still themselves be complex. For example, if a conjunct phrase has multiple values inherited from each of its conjuncts (e.g. [F, N]), then both of these values can still fill the single □ slot on Part. This leads us to an ontological distinction between *simplex probes* (γ:□]) such as the ones we find on Part and T, and *complex probes* (γ:□,□]) such as the one on &. Whether or not a probe can participate in multiple cycles of Agree has consequences for its fallibility. Preminger (2014) proposes that Agree is a fallible operation, that is, there are legitimate instances in which a probe does not successfully find a goal that do not result in ungrammaticality. We concur with this conclusion, but only assume this to be true of complex probes.[9] The intuitive logic behind this assumption is that if it is possible for a given probe to have more than one chance to agree (i.e. multiple agreement slots), then it can afford for Agree to fail since it will have a second chance to pick up a value from a later cycle of Agree. If a probe only has one chance to agree, however, then Agree cannot afford to be fallible and failure to find an appropriate goal on the first attempt will lead to non-convergent derivation due to an unvalued feature. In the present system for Serbo-Croatian, only the complex probe on & is fallible. The respective probes on T and Part are simplex, and therefore infallible, thus they require that Agree apply successfully on the first attempt. Conversely, once a probe counts as fallible, there is no requirement that the second cycle of Agree has to be successful. This will allow us to derive cases in which both Agree operations fail to find a goal on &. As we will see, the notion of fallibility plays an important role in the analysis to follow since legitimate underapplication of a particular operation is contigent on its fallibility.

4.1.3   Elementary syntactic operations

We assume a local, derivational model of syntax where all operations are driven by the need to check syntactic features (Chomsky 1995). In addition, there is a fixed set of syntactic operations that can check these features (33):

(33)   *Structure building operations*:

    a.   MERGE – (External Merge) checks (c-)selectional features (•F•)

    b.   MOVE – (Internal Merge) applies freely, but only if it has a (positive) effect on outcome

    c.   ↓AGR↓ – ('Downward' Head-Comp Agree) copies a feature value from a goal c-commanded by the probe

    d.   ↑AGR↑ – ('Upward' Spec-Head Agree) copies a feature values from a goal m-commanded by the probe

---

[9]The main empirical phenomenon that Preminger draws from to motivate the idea of fallible Agree comes from agreement in the 'agent focus' construction in Kichean. Crucially, this language has both subject/object agreement, and thus one could view agreement as being due to a fallible, complex probe on T (that is subsequently fissioned into two terminals at PF in a DM framework; Halle & Marantz 1993; Embick & Noyer 2007). Furthermore, in a language such as Icelandic that only has subject agreement, T seems to only bear a simplex probe. This is supported by well-documented instances of intervention effects with dative DPs (e.g. Holmberg & Hróarsdóttir 2003; Sigurðsson & Holmberg 2008), where T does not have a second chance to probe after failed agreement with the dative (cf. Preminger 2014:160).

The first operation MERGE is simply the familiar operation External Merge that checks (c-)selectional features on a given head, for example a verb (or *v* head) that subcategorizes for a nominal argument will bear a [•N•] that is checked by merging an NP. As will become apparent in what follows, if a head bears more than one such feature, they are discharged simultaneously by a single application of MERGE.

The second operation MOVE corresponds to Internal Merge. This operation differs from the others in not being strictly feature-driven. Instead, we assume that MOVE can apply freely, but economy considerations restrict its application to cases in which it has a '(positive) effect on outcome' (see Chomsky 2001:60f. on Object Shift in Scandinavian). In the analysis, it will become clear what it means to have a positive effect on outcome, since whether or not MOVE can apply is determined by the immediately subsequent operation. Recently, this idea has typically been implemented for successive-cyclic movement with the (sometimes optional) presence of EPP or 'edge' features on a particular head. Crucially, our conception of movement does not follow this view. Instead, the MOVE operation is akin to Greed-based approaches to movement, in which the trigger for movement is some property of the moving element itself, rather than an attracting feature of the landing site (see e.g. Chomsky 1995; Bošković 1997, 2007*a,b*; Stroik 2009 for successive-cyclic movement). In fact, we will show how the EPP property in Serbo-Croatian, i.e. whether a subject surfaces in pre- or post-verbal position, can be derived from independent factors.

The final two operations correspond to the operation Agree (Chomsky 2000, 2001). There has been much recent debate about the directionality of Agree, that is, whether it applies strictly downward (Preminger 2013; Preminger & Polinsky 2015) or upward (Zeijlstra 2012; Wurmbrand 2012; Bjorkman & Zeijlstra 2014). The stance taken in this paper is that both standard 'downward' (head-complement) Agree and 'upward' (Spec-Head) Agree (cf. Chomsky 1986*b*, 1991; Kayne 1989; Pollock 1989; Schneider-Zioga 1995; Koopman 2006) are possible options in the grammar (cf. Abels (2012:92f.) as well as Baker's (2008:155) *Direction of Agreement Parameter*).[10] Whether the effects of these operations surface in a given language, however, is regulated by the order in which syntactic operations apply.

4.2 Order of syntactic operations

One of the more radical proposals in this paper regards the order of syntactic operations. We view the order in which syntactic operations apply as a syntactic primitive, and central to deriving the variety of agreement strategies found with coordinate structures. As noted by Müller (2009), syntactic derivations often present us with 'indeterminacies in rule application', that is, there may be more than one possible operation that can apply at a given stage of the derivation. Furthermore, it is often the case that the order of application yields radically different results (see e.g. Müller 2009; Georgi 2014; Assmann et al. 2015). One option to deal with this is to appeal

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[10] Note that, assuming a strictly local, derivational syntax, Upward Agree can only ever be Spec-Head Agree since there will be no other higher structure present at the point at which ↑AGR↑ applies – thus ↑AGR↑ is always trivially Spec-Head Agree. Agreement with an element higher in the structure than the specifier would constitute a violation of the Strict Cycle Condition (Chomsky 1973; McCawley 1988).

to some principle of extrinsic (or 'parochial'; Pullum 1979) ordering (e.g. placing features on an ordered stack, cf. Georgi & Müller 2010; Müller 2010, 2011). In this paper, we assume that the order in which the elementary syntactic operations given in (33) apply is in principle free (but see the following section for an important qualification). The freedom to order operations gives rise to potential interactions. Consider the example derivation of &P in (34) with the order of operations: Merge ≫ ↓Agr↓ ≫ ↑Agr↑ (we will not consider Move at the moment, since it is not relevant). First, Merge applies, checking both c-selectional features by merging an NP as both the complement and specifier of &. Subsequently, downward Agree (↓Agr↓) applies, copying the gender value from the second conjunct (N). Finally, upward Agree (↑Agr↑) targets the NP in Spec-&P and copies a second gender value (F) to the & probe.

(34)
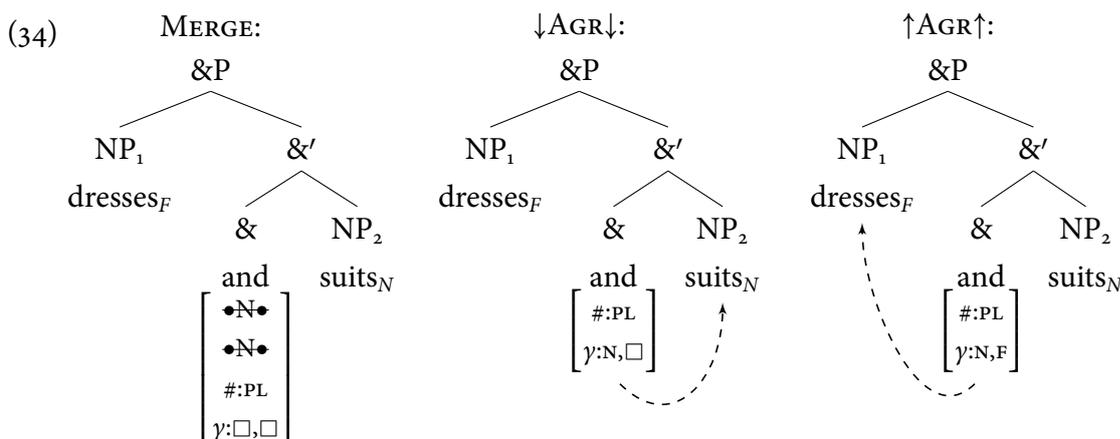
It should be clear from this order of operations that the Agree operations ↑Agr↑ and ↓Agr↓ can only successfully find a goal if Merge has applied before them. A crucial assumption we make is that there is nothing in the system that necessarily requires this to be the case. For example, we could imagine an alternative derivation, as in (35), with the following order of operations: ↓Agr↓ ≫ Merge ≫ ↑Agr↑. If we blindly follow the order as it is stated, then ↓Agr↓ cannot apply since & has not yet merged anything in its complement or specifier position. The operation therefore applies vacuously since its structural requirements are not met. The next operation is Merge, which merges both arguments of the & head. The final operation is ↑Agr↑, which can successfully apply, copying the F value from the first conjunct.

(35)
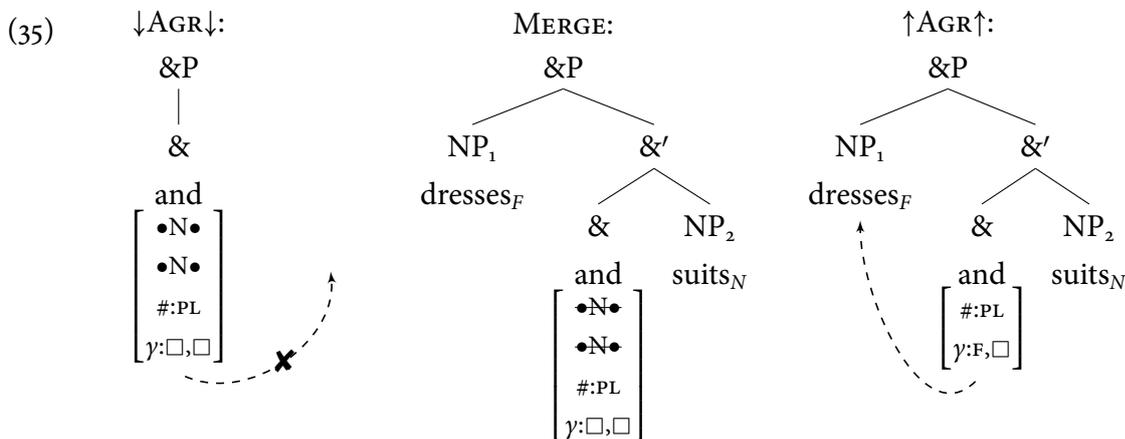
This order of operations derives a different result from the first order since the &P only inherits the features of the first conjunct (F). Although exactly the same set of operations applied as in (34), we see that the order in which they apply is crucial to the outcome. In particular, the $\downarrow$Agr$\downarrow$ operation is ordinarily fed by Merge, since Merge creates the environment required for $\downarrow$Agr$\downarrow$ to apply (by introducing an NP into the structure). The reverse order results in *counterfeeding* of $\downarrow$Agr$\downarrow$ (Kiparsky 1971, 1973), i.e. a situation in which $\downarrow$Agr$\downarrow$ did not apply, but could have applied if the order had been reversed. These representations are typically referred to as *opaque* as it is not clear why $\downarrow$Agr$\downarrow$ did not apply from looking at the output representation in (35) alone, since its context for application (an NP in the complement position of &) appears to be given. This kind of opaque interaction has been thoroughly examined in phonology (see e.g. McCarthy 2007; Baković 2011 for an overview), and to a lesser extent in syntax (although see Pullum 1979; Georgi 2014; Assmann et al. 2015; Heck & Himmelreich 2017). Crucially, opaque interactions of the basic operations in (33) will allow for the necessary variability to derive the patterns of conjunct agreement outlined in section 1.

4.3 Uniform order of operations

In order to make the present system sufficiently restrictive, however, we propose the following constraint:

(36)   *Uniform Order of Operations*:
        If the order of operations $\alpha \gg \beta \gg \delta$ holds at a given stage of the derivation s_n, then there can be no stage of the derivation s_{n+1} which does not conform to this order.

This constraint ensures that if a particular order of operations is chosen for the operations at &P, for example, then the same order must be maintained for other cycles of the derivation, e.g. TP. A similar idea can be found in Assmann et al. (2015), who show that requiring that the relative ordering of Merge and Agree be maintained throughout the derivation can derive the ban on Ā-extraction of ergative DPs. The result of (36) is that, although the order of operations is in principle free, a single order must hold throughout the derivation. For example, the stage of the derivation in (38) would be ruled out since it violates the condition in (36) (the order $\uparrow$Agr$\uparrow$ $\gg$ $\downarrow$Agr$\downarrow$ established at the XP cycle is not respected).
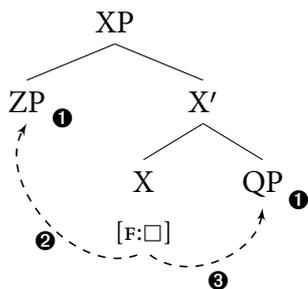
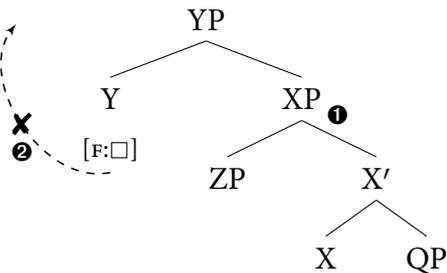(37)   Merge $\gg$ $\uparrow$Agr$\uparrow$ $\gg$ $\downarrow$Agr$\downarrow$:   (38)   *Merge $\gg$ $\downarrow$Agr$\downarrow$ $\gg$ $\uparrow$Agr$\uparrow$:
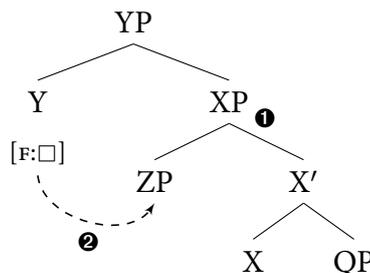
However, the early application of $\uparrow$Agr$\uparrow$ required by (36) is problematic in cases such as (39) where no specifier is present. Given our assumptions about single-value probes in section 4.1.2,
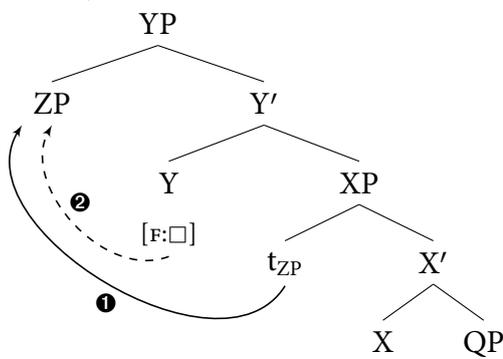
failure to find a goal leads to a crash, as shown in (39).

(39)   MERGE ≫ ↑AGR↑ ≫ ↓AGR↓:

Thus, in order to be faithful to the previously determined order of operations while still produc-
ing a convergent derivation, MOVE must apply in order to feed ↑AGR↑, as in (40).

(40)   *MOVE feeds ↑AGR↑*:

It should now be clear what was meant by 'an effect on the outcome' in the definition of MOVE in
(33b). As Chomsky (2001:33f.) puts it, 'optional rules [i.e. edge feature insertion] can only apply
if they have an effect on outcome'. In the case of Object Shift that he discusses, this effect is driven
by semantic considerations. However, there is a syntax-internal motivation for MOVE: it applies
to prevent a crash in the derivation, i.e. a situation such as (39). Furthermore, we will see that
MOVE also interacts with downward Agree (↓AGR↓) in an interesting manner. If MOVE applies
before ↓AGR↓, it will move the subject out of the c-command domain of the probe and thereby
remove the context for application of ↓AGR↓, since there will no longer be c-commanded goal
for this operation to target.

(41)   *MOVE bleeds ↓AGR↓*:
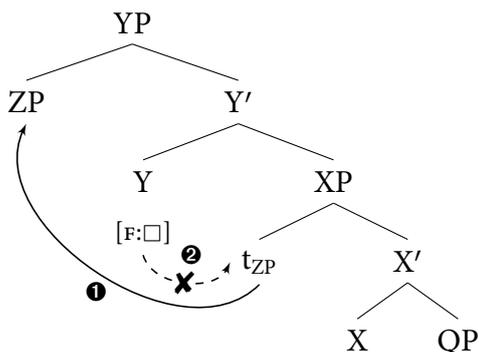
Interactions of this kind, as well as the condition in (36), play an integral part in deriving whether a particular agreement pattern can occur pre- or postverbally.[11]

4.4 Deriving conjunct agreement

With these assumptions in place, we will demonstrate how they work together to derive all and only those patterns of conjunct agreement that we find in Serbo-Croatian. Recall that the patterns that we want to derive are the following:

(42)   *Patterns of conjunct agreement in Serbo-Croatian:*

	PREVERBAL	POSTVERBAL
Resolved Agreement	✓	✓
First Conjunct Agreement	✓	✓
Last Conjunct Agreement	✓	✗
Medial Conjunct Agreement	✗	✗

As the table in (42) shows, the goal is to derive RA and FCA in both preverbal and postverbal position, while limiting LCA only to preverbal contexts. Given the elementary operations we established, we can now allow them to apply in various orders to derive different outcomes. The factorial typology of the operations derives the following patterns:[12]

(43)   *Possible orders of operations for conjunct agreement*:

(Move)	≫	Merge	≫	↑Agr↑	≫	↓Agr↓	→ RA (preverbal)
(Move)	≫	Merge	≫	↓Agr↓	≫	↑Agr↑	→ RA (postverbal)
(Move)	≫	↑Agr↑	≫	Merge	≫	↓Agr↓	→ LCA (preverbal)
(Move)	≫	↓Agr↓	≫	Merge	≫	↑Agr↑	→ FCA (postverbal)
(Move)	≫	↓Agr↓	≫	↑Agr↑	≫	Merge	→ FCA (postverbal)
(Move)	≫	↑Agr↑	≫	↓Agr↓	≫	Merge	→ FCA (preverbal)

---

[11]There is still the question of what formal means can be used to implement (36), that is, how can we ensure that the order of operations is maintained across the derivation? A number of options come to mind. For present purposes, we assume that the order in which operations apply is a syntactic primitive to which the derivation has permanent access. If this is 'stored' throughout the derivation, this implies that derivations have memory across phases. However, it seems conceivable that the order of operations could be 'inherited' from lower heads. As a reviewer correctly observes, this cannot be done by the operation (downward) Agree in our system since there are orders in which ↓Agr↓ fails to apply. Instead, this operation would be akin to *inheritance* as assumed for C and T (Richards 2007; Chomsky 2008), which must be a distinct process from Agree. A viable alternative would be to assume (36) as a transderivational constraint (e.g. in Optimality Theory; Broekhuis & Vogel 2013) that filters out any derivations that do not conform to the order of operations established at the previous cycle. We will remain agnostic with regard to the exact implementation of (36), but will simply demonstrate its predictive power in the analysis to follow.

[12]Note that we keep the position of Move constant: it either applies first, or not at all. On the one hand, this is for practical reasons since allowing for the variable ordering of three operations means that we only have to consider 6 possibles orders (3! = 3 x 2 x 1). Allowing for the position of Move to vary would then generate 24 orders (4! = 4 x 3 x 2 x 1), and potentially unwanted outcomes. Furthermore, the early application of Move could follow from deeper principles of grammar such as the *Earliness* principle (Pesetsky 1989) or even a general preference for Move before Merge (see Shima 2000, Broekhuis & Klooster 2007, Chomsky 2013:41 and Heck & Müller 2016:79 for general discussion).

The six orders in (43) derive all the grammatical patterns of conjunct agreement in (42) and crucially do not derive the unattested pattern of postverbal LCA. In the following sections, we will discuss each of the orders in (43) and demonstrate how the relevant agreement strategies are derived. The illustrations will be based on the following examples, which indicate the attested patterns in Serbo-Croatian:

(44)   [&P Haljine   i   odela]   su   stajali   / stajala   / %stajale   u
           dress.FPL and suit.NPL are stand.PRT.MPL stand.PRT.NPL   stand.PRT.FPL in
       ormanu.
       wardrobe
       'Dresses and suits were standing in the wardrobe.'

(45)   U ormanu   su   stajali   / stajale   / *stajala   [&P haljine   i
       in wardrobe are stand.PRT.MPL stand.PRT.FPL   stand.PRT.NPL   dress.FPL and
       odela].
       suit.NPL
       'Dresses and suits were standing in the wardrobe.'

The crucial component of the analysis will be that the relative order of ↑AGR↑ and ↓AGR↓ inside the conjunct phrase must be maintained for agreement with the participle. This will determine whether the conjunct phrase appears pre- or postverbally, since MOVE applies only when it is necessary to feed a subsequent operation of ↑AGR↑.

4.4.1   Resolved agreement

Resolved Agreement takes the gender features of both conjuncts into account, surfacing as masculine or feminine agreement with two masculine or feminine conjuncts, or masculine plural agreement (default) if the features of the conjuncts do not match.[13] The fact that the default value

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[13]It is worth noting that this masculine agreement on the participle cannot be viewed as default morphology resulting from 'failed' agreement (cf. Preminger 2014), but we must rather treat it as agreement with coordination itself (see section 4.4.2). The only potential candidate for what may look like failed agreement is the neuter singular agreement in impersonals and *weather*-verbs, as in (ia)–(ic) (adapted from Franks 1995:293):

(i)   a.   Hladno   je.
             cold.N.SG is.3.SG
             '(It) is cold'
        b.   Trebalo   je   da...
             needed.N.SG is.3.SG that
             '(It) was necessary that ...'
        c.   Činilo   mi   se   da...
             seemed.N.SG to.me refl that
             '(It) seemed to me that . . . '

However, we argue that the [N.3.SG] value in impersonal sentences without an overt subject is not the result of default valuation due to failed agreement, but rather agreement with a silent expletive, following Franks (1995) who claims that 'the neuter third person singular is technically not a non-agreeing form but rather the result of syntactic agreement with an empty subject' (Franks 1995:113). We follow Perlmutter & Moore (2002); Perlmutter (2007); Legate (2014) in assuming that impersonal expletives are cases of *pro*-drop in SC, just like it is argued for Russian and Polish in these works. Additionally, Franks (1995:113), Perlmutter (2007:285) and Legate (2014:98) argue that the expletive *pro* carries 3rd person singular neuter features (also see Svenonius 2002:8). Such expletives also lack semantic content (see Chomsky 1981:323ff., Svenonius 2002:8, and in particular Perlmutter 2007:282f. for various tests that confirm this for Russian, as well as Franks 1995:294 for the claim that subject of impersonal is not assigned

does not correspond to the values of individual conjuncts suggests that the features of the individual conjuncts are somehow 'resolved' to masculine by inside the conjunct phrase. We return to the exact system of resolution in section 4.4.2, but what is important at this point is that & successfully agrees with both conjuncts. Given our assumptions about ordering of operations, this means that the two orders resulting in Resolved Agreement are those in which both Agree operations apply after MERGE (46).

(46)   *Orders for Resolved Agreement*:

    a.   (MOVE) ≫ MERGE≫ ↑AGR↑ ≫ ↓AGR↓

    b.   (MOVE) ≫ MERGE≫ ↓AGR↓ ≫ ↑AGR↑

Let us first consider the derivation involving the order in (46a). As MOVE applies vacuously at the &P (since it has no effect on outcome), the first operation to apply is MERGE and the &-head merges its two argument NPs. Next, ↑AGR↑ applies and the conjunction copies the gender value from the higher NP. Subsequently, ↓AGR↓ applies and the conjunction copies the value from the lower NP.
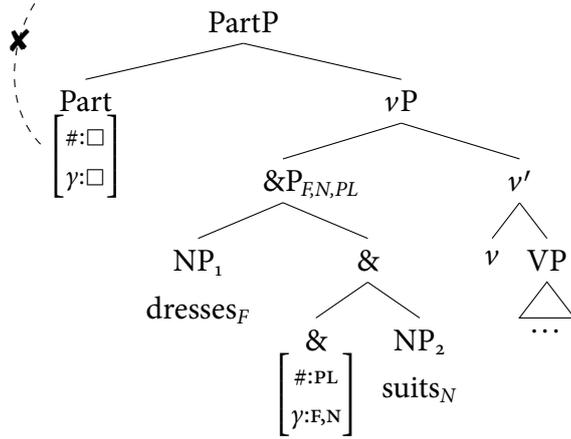
(47)   *&P:* (MOVE) ≫ MERGE≫ ↑AGR↑ ≫ ↓AGR↓

$$[_{\&P_{[\gamma:F,N]}} \text{ NP}_1 {}_{[\gamma:F]} \; ❶ \; [_{\&'} \; \&_{[\#:PL, \gamma:F,N]} \text{ NP}_2 {}_{[\gamma:N]} \; ❶ \;]]$$

After Agree has taken place, the features of the conjuncts percolate to the &P node and acesssible for higher probes. The order of operations in (46a) has to be maintained at PartP.[14] Furthermore, MOVE only applies if it has an effect on outcome, i.e. to avoid a crash. Since MERGE does not apply at PartP (Part does not have any features triggering External Merge), the next operation is ↑AGR↑. If MOVE were not to apply, then ↑AGR↑ looks in the specifier of Part but does not find a goal. Since gender on Part is a simplex probe, it is infallible and failure to find a goal results in a crash:
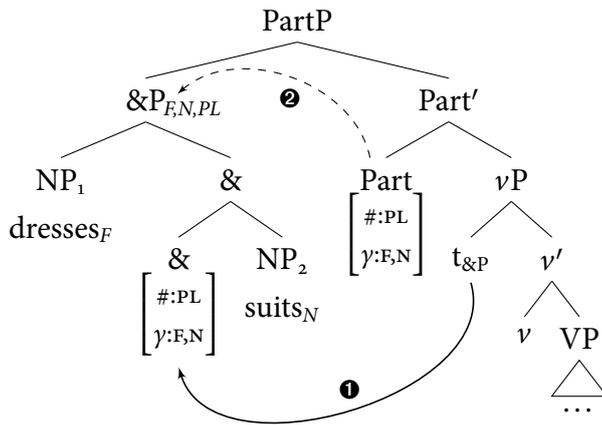
---

a theta-role).

[14]We do not discuss the *v*P cycle here. One may worry about whether certain orders of operations make incorrect predictions with regard to assignment of accusative case by *v*. However, we follow recent 'dependent case' approaches in which case is assigned in competition with a structurally c-commanded DP (e.g. Marantz 1991; McFadden 2004; Preminger 2014; Baker & Vinokurova 2010; Baker 2015; Levin & Preminger 2015). Therefore, a given order of operations is irrelevant for case assignment.
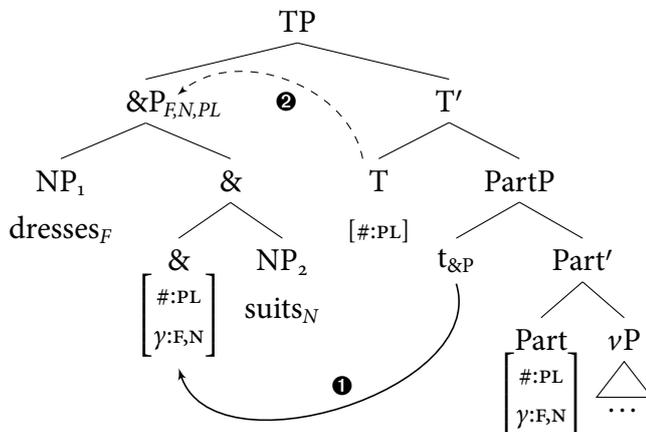
(48)   *PartP*: (MERGE) ≫ ↑AGR↑ ≫ (↓AGR↓):

```
                    PartP
              ┌───────┴───────┐
            Part              vP
          ⎡#:□⎤        ┌───────┴───────┐
          ⎣γ:□⎦     &P_{F,N,PL}        v′
                  ┌─────┴─────┐     ┌───┴───┐
                NP₁          &      v      VP
               dresses_F  ┌───┴───┐         △
                          &      NP₂       ···
                       ⎡#:PL⎤   suits_N
                       ⎣γ:F,N⎦
```

On the other hand, if MOVE does apply, it will result in movement of &P to Spec-PartP and thereby feed ↑AGR↑, avoiding a crash:

(49)   *PartP*: MOVE ≫ (MERGE) ≫ ↑AGR↑ ≫ (↓AGR↓):

```
                        PartP
                ┌─────────┴─────────┐
          &P_{F,N,PL}    ❷         Part′
          ┌─────┴─────┐        ┌─────┴─────┐
        NP₁          &        Part          vP
       dresses_F  ┌───┴───┐  ⎡#:PL⎤     ┌───┴───┐
                  &      NP₂ ⎣γ:F,N⎦   t_{&P}    v′
               ⎡#:PL⎤   suits_N              ┌───┴───┐
               ⎣γ:F,N⎦                       v      VP
                                                     △
                                            ❶       ···
```

At TP, the order is maintained and MOVE triggers movement of the &P from Spec-PartP to Spec-TP, feeding ↑AGR↑ yet again (50).

(50)   *TP*: MOVE ≫ (MERGE) ≫ ↑AGR↑ ≫ (↓AGR↓):

```
                        TP
                ┌─────────┴─────────┐
          &P_{F,N,PL}    ❷          T′
          ┌─────┴─────┐        ┌─────┴─────┐
        NP₁          &        T          PartP
       dresses_F  ┌───┴───┐  [#:PL]   ┌─────┴─────┐
                  &      NP₂        t_{&P}       Part′
               ⎡#:PL⎤   suits_N            ┌─────┴─────┐
               ⎣γ:F,N⎦                    Part          vP
                                        ⎡#:PL⎤          △
                                  ❶     ⎣γ:F,N⎦        ···
```

22

With this order of operations, Move is obligatory since it has to feed ↑Agr↑. This follows from the fact that ↑Agr↑ was ordered before ↓Agr↓ at &P and this order has to be respected at later cycles. Consequently, a derivation with the order ↑Agr↑ ≫ ↓Agr↓ results in preverbal Resolved Agreement. The second order of operations in (46b) has the order ↓Agr↓ ≫ ↑Agr↑. At the &P level will give the exact same outcome as in (47), with the difference that ↓Agr↓ applies before ↑Agr↑ (51).

(51) *&P:* (Move) ≫ Merge≫ ↓Agr↓ ≫ ↑Agr↑

$$[_{\&P_{[\gamma:F,N]}} \text{NP}_{1\,[\gamma:F]} \; ❶ \; [_{\&'} \; \&_{[\#:PL,\, \gamma:N,F]} \; \text{NP}_{2\,[\gamma:N]} \; ❶ \;]]$$

As we have seen, the relative order of ↑Agr↑ and ↓Agr↓ is irrelevant at &P, since both operations are fed. However, this change in order has consequences for the higher projections PartP and TP. As before, we have to determine whether Move applies at PartP. With the previous order, since ↑Agr↑ was the first operation to apply during the PartP cycle, Move was required in order to feed it. However, with this order of operations, ↓Agr↓ applies first, and Move actually bleeds ↓Agr↓ by removing it from the c-command domain of the probe:

(52) *PartP:* Move ≫ (Merge) ≫ ↓Agr↓ ≫ (↑Agr↑):
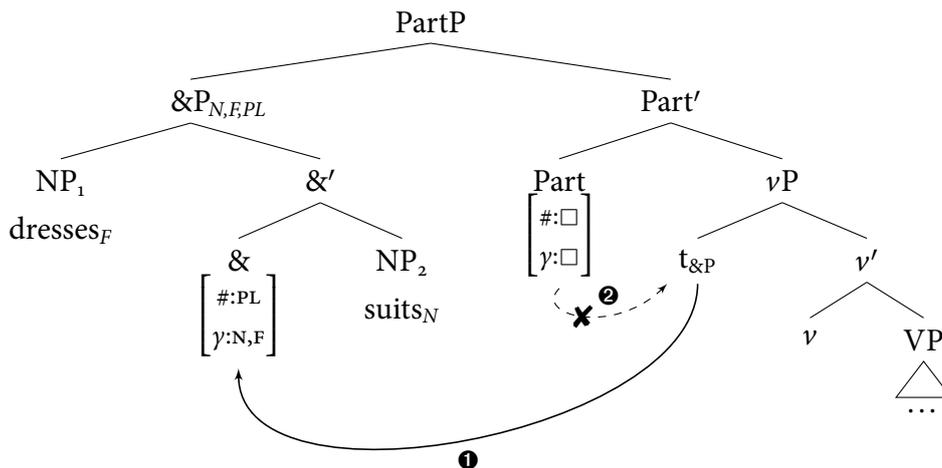
Thus, Move does not apply in orders where ↓Agr↓ precedes ↑Agr↑ since it has a negative effect on outcome (by bleeding ↓Agr↓). The conjunct phrase therefore remains in postverbal position and Part agrees with it in gender:

(53) *PartP:* (Merge) ≫ ↓Agr↓ ≫ (↑Agr↑):
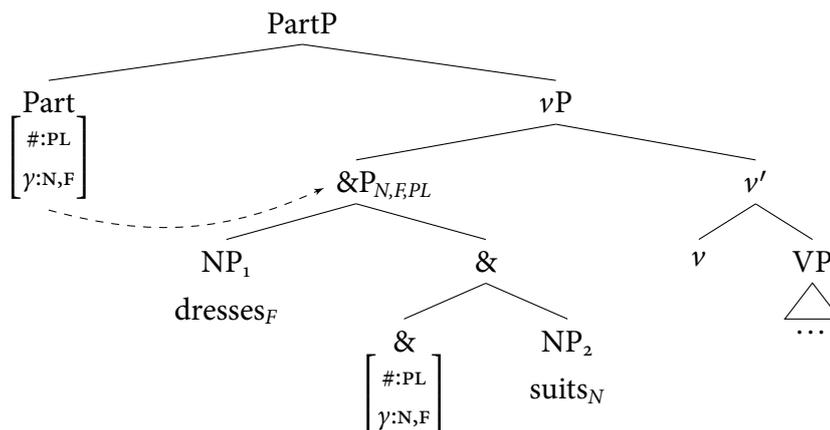
The same situation arises at TP and, in order to not bleed ↓Agr↓, &P remains postverbal. What we see here is that the order of operations at &P can derive what would otherwise be achieved by the optional presence of an EPP feature in Bošković's (2009) account. Our account, on the other hand, avoids the need for postulating an EPP feature. As we will see, linking EPP-like movement to the order of operations at &P will allow us to crucially rule out postverbal LCA. Yet before demonstrating this, we will first consider the system of gender resolution in more detail.

4.4.2 Gender resolution and default masculine

So far, we have seen that the syntax of 'resolved agreement' involves the & head agreeing with each of its conjuncts and projecting two gender values. These values are then picked up by the Part head under agreement with &P. However, there still remains the question of how these conflicting values are often 'resolved' to the default masculine feature realized by the exponent. There are various approaches to resolution, e.g. resolution rules (Corbett 1982, 1983; Hayward & Corbett 1988), set-theoretic union (Dalrymple & Kaplan 2000; Al Khalaf 2015) or some system of feature percolation (van Koppen & Rooryck 2008; Franks & Willer-Gold 2014; Despić 2016). Our approach to resolution will be based on constraint-driven impoverishment of conflicting gender values on the Part head in a 'late insertion' approach to morphology such as Distributed Morphology (Halle & Marantz 1993). Recall the basic pattern of resolution for mixed gender conjuncts that we saw in Section 2.1 (repeated below) where mismatched gender on the conjuncts results in default masculine agreement.

(54) [&P Okolnosti   i   vremena] su bili   teški   za sve stanovnike.
          circumstance.FPL and time.NPL are be.PRT.MPL difficult.MPL for all inhabitants
          'The circumstances and times were hard for all the inhabitants.'   (*F+N=M*)

(55) Na stolu su stajali   [&P pisma   i   koverte].
      on desk are stand.MPL   letter.NPL and envelope.FPL
      'Letters and envelopes were lying on the desk.'   (*M=N+F*)

The system of resolution we propose is situated entirely in the post-syntactic component and involves deletion of all but the least marked value on a terminal bearing conflicting values. On the basis of the distribution of genders across declension classes, Stankiewicz (1986) and Andrews (1990:176) argue for the following markedness hierarchy for Serbo-Croatian and Russian:

(56) *Markedness hierarchy in Serbo-Croatian*:
      Feminine > Neuter > Masculine

Following this hierarchy, the least marked gender in Serbo-Croatian is masculine, and the most marked is feminine. Thus, if Part bears F+M as gender values originating from &P, then F will be deleted since it is the more marked of the two. Whereas it is possible to formulate a set of impoverishment rules to achieve this, one would require a distinct rule for each combination. Instead, we pursue an optimality-theoretic implementation of impoverishment, in which hierarchies are translated into ranked markedness constraints (cf. Aissen 1999, 2003; Keine 2010;

Keine & Müller 2015 and see Mitchley 2015 for an OT approach to resolution with coordinate structures in Bantu). Following Rice (2006), we adopt the three markedness constraints in (57) (one for each gender).

(57)   a.   *Masculine – 'Assign a violation mark for a masculine value.'

           b.   *Feminine – 'Assign a violation mark for a feminine value.'

           c.   *Neuter – 'Assign a violation mark for a neuter value.'

The ranking of these constraints then corresponds to the relevant markedness relations we find in a given language. Following the hierarchy in (56), we establish the ranking in (58), where the constraint against masculine values is ranked lowest:

(58)   *Feminine ≫ *Neuter ≫ *Masculine

This constraint-based system of impoverishment still requires a high-ranked constraint that disfavours feature mismatches. We propose the following constraint militating against mismatched values:

(59)   *FeatClash:

        Assign a violation mark for each pair of mismatched features.

With these constraints in place, one of the features must be deleted due to the high ranking of *FeatClash.[15] It is then the ranking of markedness constraints that determines which of the features on Part must be deleted prior to Vocabulary Insertion. Since *Masc is ranked lower than *Fem, the masculine feature is preserved (60).

(60)

Part:[γ: F, M]	*FeatClash	*Fem	*Neut	*Masc
a. Part:[γ: F, M]	*!	*		*
b. Part:[γ: F]		*!		
☞ c. Part:[γ: M]				*

This derives the effect of gender resolution, that is, conflicting gender features are always resolved to the least marked value. Resolution in this OT-based system of impoverishment is simply a case of *The Emergence of the Unmarked* for gender (e.g. McCarthy & Prince 1994; Bresnan 2001; Becker & Flack Potts 2011). Crucially, resolution is then a distinct process to default agreement (see Franks & Willer-Gold 2014:107 and Willer-Gold et al. 2016:214). In an impoverishment-based account, it is unclear how F+N can be resolved to M simply by deletion; masculine must somehow be added. We adopt the idea that &P itself can be prespecified for default masculine gender, as suggested by Marušič et al. (2015), Despić (2016) and Nevins (2016). Sometimes, this

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[15]To simplify things somewhat, we do not include faithfulness constraints that might punish deletion (e.g. Dep). However, these should be assumed to crucially be ranked lower than the relevant markedness constraints in order to trigger the repair. Furthermore, we do not consider candidates which add features, as this would not improve the harmony of a candidate with respect to *FeatClash.

is assumed to be contingent on the features of the respective conjunct (e.g. Despić 2016:5), but we assume that it is a generally available option. Concretely, there are two variants of the & in the lexicon: one with pre-specified plural number and underspecified gender ($\&_{[\#:\text{PL},\,\gamma:\square,\square]}$), and another with an additional pre-specified masculine value for gender ($\&_{[\#:\text{PL},\,\gamma:\text{M},\square,\square]}$). Since we are assuming that gender, unlike number, is assumed to be a fallible, multi-value probe, pre-specifying a masculine value will not prevent additional values from being acquired under Agree. For example, if we have a combination of F+N nouns and an &P with a gender feature prevalued for masculine as in (61), then the & will inherit two additional gender values (given an appropriate order of operations).

(61)
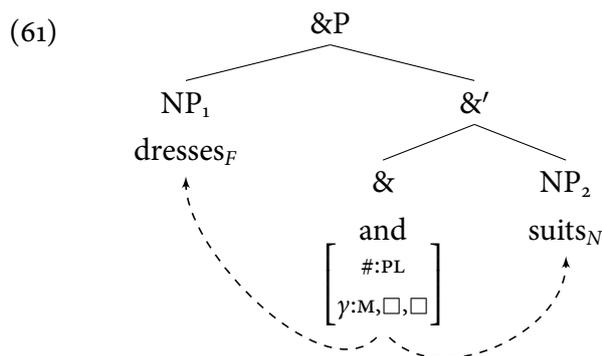
These gender values are then copied to the Part head, where they must be realized by an appropriate exponent. Again prior to Vocabulary Insertion, the terminal undergoes impoverishment. Importantly, two features must be deleted to avoid a fatal violation of *FeatClash. Since masculine is the least marked gender, the optimal candidate in (62e) deletes both F and N. Thus, the combination of F+N+M is resolved to the default masculine form.

(62)

Part:[γ: F, N, M]	*FeatClash	*Fem	*Neut	*Masc
a. Part:[γ: F, N, M]	*!**	*	*	*
b. Part:[γ: F, N]	*!	*	*	
c. Part:[γ: F]		*!		
d. Part:[γ: N]			*!	
☞ e. Part:[γ: M]				*

A common claim in the literature is that default masculine is not possible with coordination of two conjuncts with matching gender, e.g. feminine (63) or neuter (64) (e.g. Corbett 2006:12, Franks & Willer-Gold 2014:100,fn.29, Despić 2016:3).

(63) [&P Zavese   i   biljke]   su ukrašavale   prozor.
       curtain.FPL and plant.FPL are decorate.PRT.FPL window
      'Curtains and plants decorated the window.'   (F+F=F)

(64) [&P Ta   sećanja   i   razmantranja] sve su   više ustupala   mesto novim
           this.NPL memory.NPL and reflection.NPL all are more yield.PRT.NPL place new.PL
      utiscima.
      impression.PL
      'Those memories and reflections gave way more and more to new impressions.' (*N+N=N*)

(Corbett 2006:12)

However, the large-scale production study carried out by Willer-Gold et al. (2016) shows that, although the overwhelming preference for speakers was to agree with the gender of matching conjuncts, some did produce masculine default forms. For example, with conjuncts in preverbal position F+F=M was produced 15% of the time, and N+N=M at a rate of 12% (Willer-Gold et al. 2016:204). This is something that the present system can also derive since speakers always have the option of choosing the & head with a pre-specified masculine gender value. Here, the distinction between resolution and default becomes clear. Selecting the variant of & with masculine gender ($\&_{[\#:\text{PL}, \gamma:\text{M},\Box,\Box]}$) from the lexicon will always result in default masculine agreement. If the other & head without a pre-specified value ($\&_{[\#:\text{PL}, \gamma:\Box,\Box]}$) is chosen, then we will either have resolution or a CCA strategy, depending on the given order of operations.[16]

In this section, we have developed a system of gender resolution that relies entirely on post-syntactic, constraint-driven impoverishment. The system present here allows for either the & head with a complex probe for gender, or the variant of & with an additional pre-specified masculine gender feature to be chosen. If the latter is selected, then the derivation deterministically results in default agreement, regardless of the order of operations involved. As such, we do not consider this option in any of the derivations to follow. All the cases of closest conjunct agreement that we will discuss in the remainder of the paper involve & selection of & without an inherent masculine value.

4.4.3   Last Conjunct Agreement

Last Conjunct Agreement (LCA) is a pattern of CCA in which the verb agrees with the second/last conjunct when the &P is in a preverbal position. Recall from examples (44) and (45) (repeated below) that LCA is only possible when the conjunct phrase is preverbal. If the &P is

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[16]Nevertheless, there does seem to be a strong preference for non-masculine agreement in uniform gender conjunctions (NN/FF) (see Willer-Gold et al. 2016:204,214ff.). Furthermore, the rate of masculine masculine in postverbal position was even lower (only 2% with NN conjuncts and 3% with FF conjuncts; Willer-Gold et al. 2016:204). One option to account for this preference would be to restrict the selection of & without pre-specified gender for derivations with uniform gender conjuncts. However, this strikes us as requiring a undesirable degree of Look Ahead. Instead, one could build this into the resolution mechanism itself. For speakers who do not allow for masculine with FF and NN combinations, one could adopt a higher-ranked constraint such as (i) that protects the most frequently-occurring value in the input.

(i)   MAJORITYRULE:
        In a feature-value pair containing the values α and β; if there are n occurences of β and $>n$ occurences of α in the input, then preserve α in the output.

If ranked higher than the relevant markedness constraints, this would rule out masculine if it is the least numerous value in the input. Furthermore, this constraint could be ranked stochastically (e.g. Boersma 1998) to reflect the production preferences reported by Willer-Gold et al. (2016).

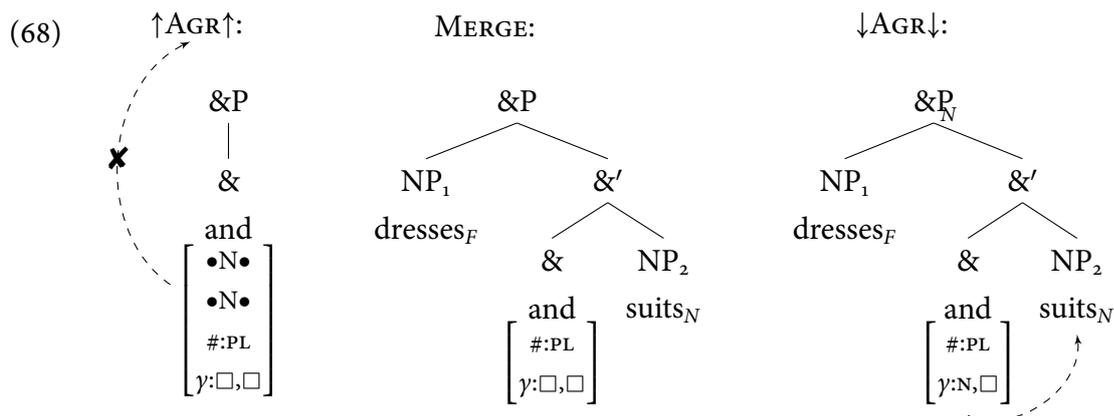postverbal, it is ungrammatical.

(65) [&P Haljine i odela] su stajala u ormanu.
       dress.FPL and suit.NPL are stand.PRT.NPL in wardrobe
       'Dresses and suits were standing in the wardrobe.'

(66) *U ormanu su stajala [&P haljine i odela].
       in wardrobe are stand.PRT.NPL dress.FPL and suit.NPL
       'Dresses and suits were standing in the wardrobe.'

The central claim of this paper is that agreement with the 'closest conjunct' is illusory. Instead, what we actually have in the case of LCA, for example, is agreement with the entire conjunct phrase which has only inherited the features of one of its conjuncts (in this case, the second). In order to have an &P only inherit the features of the second conjunct, the Agree operation targeting the first conjunct (↑AGR↑) has to fail to apply. This can be achieved with the order of operations in (67) where ↑AGR↑ applies too early, i.e. before the any of the conjuncts have been merged.

(67) (MOVE) ≫ ↑AGR↑ ≫ MERGE ≫ ↓AGR↓

At the &P level, MOVE does not apply as it has no effect on outcome. ↑AGR↑ applies, and since there is still no goal that this operation can target, it does not find a value (68). MERGE applies next and merges both NP arguments (thereby counterfeeding ↑AGR↑, as MERGE would have fed ↑AGR↑ had it applied earlier). Finally, ↓AGR↓ applies, supplying the gender probe of & with the feature of the lower conjunct. As a result, the &P node bears the features of only the second conjunct.

(68)

↑AGR↑:

&P
|
&
and
$\begin{bmatrix} \bullet N \bullet \\ \bullet N \bullet \\ \#:\text{PL} \\ \gamma:\square,\square \end{bmatrix}$

MERGE:

&P
NP₁   &′
dresses_F
           &   NP₂
           and   suits_N
$\begin{bmatrix} \#:\text{PL} \\ \gamma:\square,\square \end{bmatrix}$

↓AGR↓:

&P_N
NP₁   &′
dresses_F
           &   NP₂
           and   suits_N
$\begin{bmatrix} \#:\text{PL} \\ \gamma:\text{N},\square \end{bmatrix}$

At PartP, the order of operations in (67) must also be respected. As in the previous section, MOVE happens only if it will feed subsequent application of ↑AGR↑. Since the relevant order for LCA involves early application of ↑AGR↑, this is the first operation to apply at PartP and thus MOVE must be carried out in order to feed it.[17]

___

[17] It is important to note that we do not assume that the functional sequence (f-seq) is built by MERGE. If this were the case, then ↑AGR↑ would apply before the *v*P complement had been merged. Crucially, MERGE is an operation

(69) Move ≫ ↑Agr↑ ≫ (Merge) ≫ (↓Agr↓):
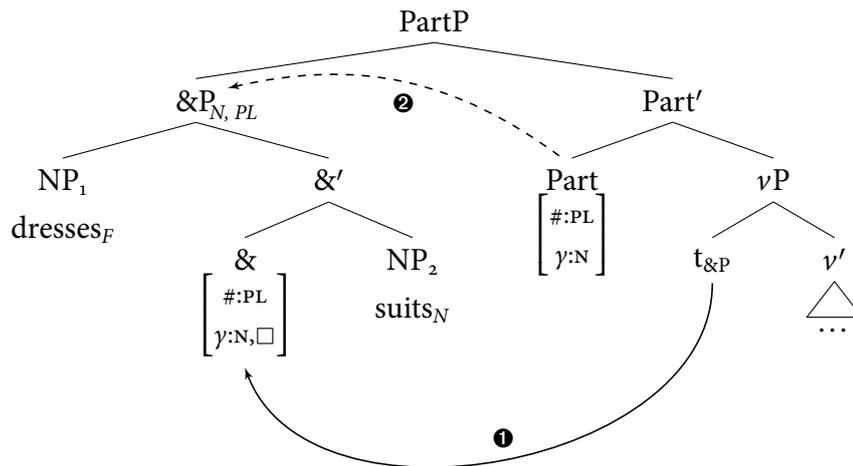
The same order of operations will be repeated once T is merged, resulting in movement of &P to Spec-TP and deriving the preverbal LCA pattern. It is important to note that if Move did not apply, then ↑Agr↑ would probe upwards, but not find an available goal. Since Part bears an infallible, single-value probe for gender, failure to find a goal leads to a crash.

(70) ↑Agr↑ ≫ (Merge) ≫ (↓Agr↓):
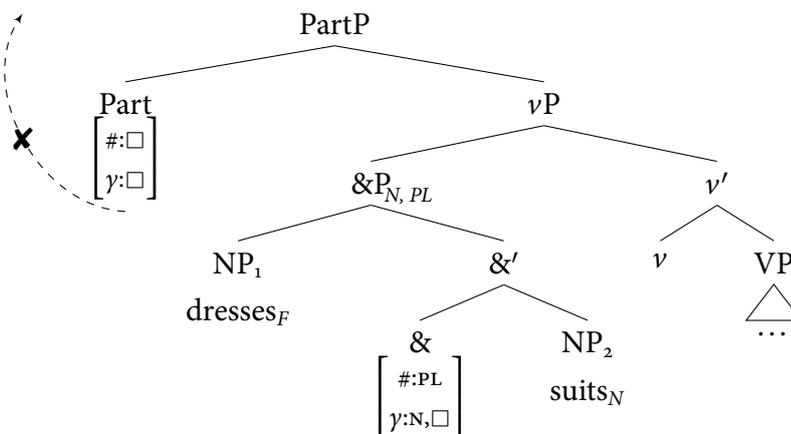
This has the welcome consequence that Move has to apply with the order deriving LCA (67). This correctly derives the fact that postverbal LCA, or Lowest Conjunct Agreement, is not impossible. Furthermore, this follows from the same order of operations that applied inside the &P to derive agreement with the final conjunct only. Thus, the possibility for a particular pattern to occur pre- or post-verbally can be explained without reference to an arbitrary EPP feature. Instead, whether or not the conjunct phrase has to move follows from the order of operations

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that checks c-selectional features (e.g. for nominal arguments). Following Adger (2003), we assume that f-seq is not built with c-selectional features since this would entail massive redundancy in the lexicon (since parts of f-seq can be omitted). For concreteness sake, we could distinguish two types of merge: *f*-Merge and *c*-Merge. The former would be responsible for building the f-seq (e.g. merging the next highest head on the f-seq that is available in the numeration) and would always apply first (before Move). The latter operation would then be the Merge operation that is of direct interest to us here.

independently required to project only the features of the final conjunct at &P.

4.4.4 First Conjunct Agreement

First Conjunct Agreement (FCA) is the pattern of CCA in which the verb agrees with the first conjunct in an &P. The canonical case of FCA is agreement with the first conjunct in the postverbal conjunct phrase, as in (71). Yet in Serbo-Croatian, this pattern has been shown to also appear in preverbal contexts. In this case, the verb agrees with the highest conjunct, i.e. with the first conjunct in a preverbal &P (72) (Marušič et al. 2015; Willer-Gold et al. 2016).

(71)   U ormanu   su stajale   [&P haljine   i   odela].
       in wardrobe are stand.PRT.FPL   dress.FPL and suit.NPL
       'Dresses and suits were standing in the wardrobe.'

(72)   %[&P Haljine   i   odela] su stajale   u ormanu.
            dress.FPL and suit.NPL are stand.PRT.FPL in wardrobe
       'Dresses and suits were standing in the wardrobe.'

As can be seen in the factorial typology in (43) above, there is more than one order that derives FCA.[18] In this section, we focus on the order in which MERGE counterfeeds ↓AGR↓. With this order, ↓AGR↓ applies at &P before MERGE introduces the NP arguments into the structure. After MERGE applies, it provides a goal for ↑AGR↑. The result is a conjunct phrase that bears only the gender feature of the first conjunct (73).

(73)   *&P:* (MOVE) ≫ ↓AGR↓ ≫ MERGE ≫ ↑AGR↑
        $[_{\&P_{[\gamma:F, \#:PL]}}$ NP$_{1\,[\gamma:F]}$ ❷ $[_{\&'}$ &$_{[\#:PL,\,\gamma:F]}$ NP$_{2\,[\gamma:N]}$ ❷ $]]$
                                    ❸   ❶ ✗

The same operations apply at PartP level again, yielding two possible options depending on whether MOVE applies. Since MOVE bleeds ↓AGR↓, which is the next operation to apply at PartP, it cannot apply in derivations with this order (74).

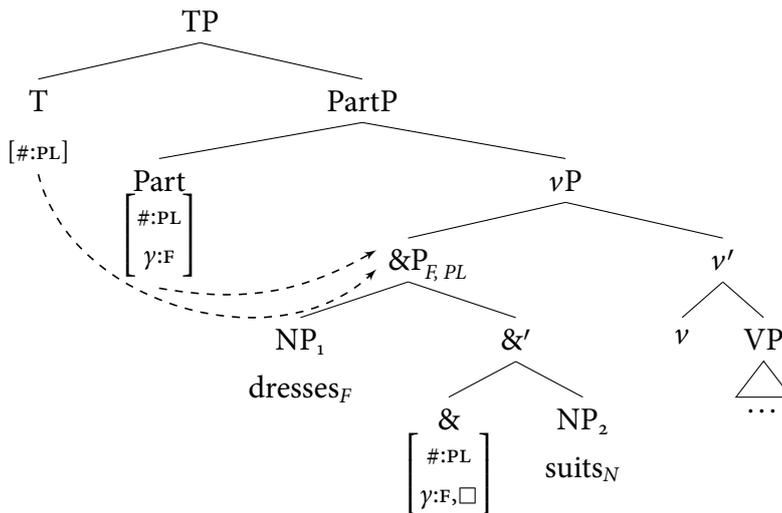[18] A reviewer wonders whether the fact that more than one order leads to FCA means that we would expect it to be a more common strategy. This does not necessarily seem to be the case empirically (cf. Willer-Gold et al. 2016). This depends to some extent on whether one views the order of operations as being random or not. A particular choice of order results in a deterministic derivation, so a speaker could 'know' in some sense what agreement strategy they will end up with. At present, we do not commit to any particular claim about the relative frequency of a particular order. All orders are equally available to the speaker at a given time (like the competing grammars of Marušič et al. 2015) and if there are usage preferences, these come from elsewhere.

(74) MOVE ≫ ↓AGR↓ ≫ (MERGE) ≫ (↑AGR↑):

PartP

&P$_{F, PL}$ — Part′

NP$_1$ dresses$_F$ — &′

& $\begin{bmatrix} \#:PL \\ \gamma:F,\square \end{bmatrix}$ — NP$_2$ suits$_N$

Part $\begin{bmatrix} \#:\square \\ \gamma:\square \end{bmatrix}$ — vP

t$_{\&P}$ — v′

v — VP …

❶ ❷ ✗
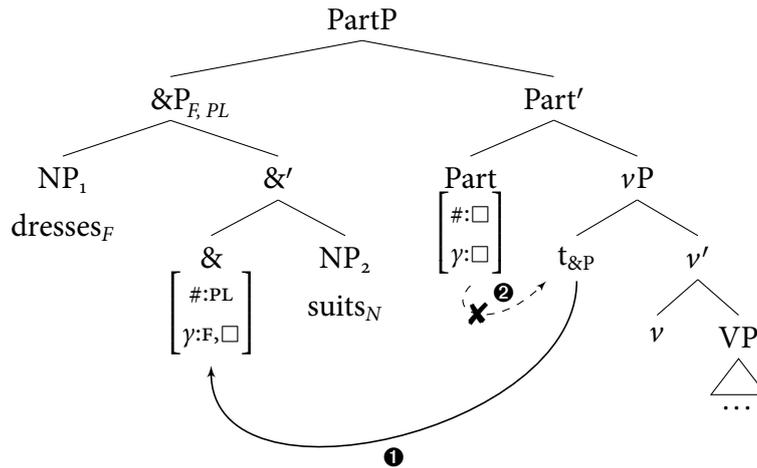
As a result, MOVE is blocked at both PartP and TP, and the conjunct phrase stays *in situ*, yielding postverbal FCA (75).
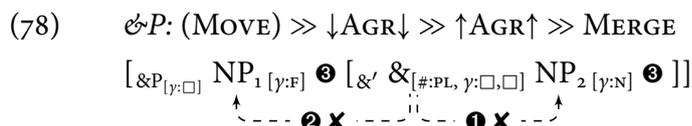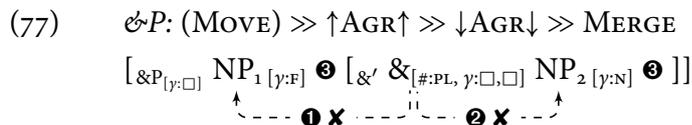
(75) ↓AGR↓ ≫ (MERGE) ≫ (↑AGR↑):

TP

T [#:PL] — PartP

Part $\begin{bmatrix} \#:PL \\ \gamma:F \end{bmatrix}$ — vP

&P$_{F, PL}$ — v′

NP$_1$ dresses$_F$ — &′

& $\begin{bmatrix} \#:PL \\ \gamma:F,\square \end{bmatrix}$ — NP$_2$ suits$_N$

v — VP …

As with LCA, what looks like agreement with a single conjunct is actually the result of Part agreeing with an &P which has inherited the features of its highest conjunct. In the following section, we discuss the two remaining orders of operations that also derive FCA.

4.4.5 Two additional patterns of FCA

As noted previously in (43), there are two possible orderings of operations in which both operations ↑AGR↑ and ↓AGR↓ are counterfed by MERGE, repeated here in (76). Both of these orders will result in FCA. The first order in (76a) derives in postverbal FCA, and the second one in (76b) results in preverbal FCA.

(76) a. (MOVE) ≫ ↑AGR↑ ≫ ↓AGR↓ ≫ MERGE
      b. (MOVE) ≫ ↓AGR↓ ≫ ↑AGR↑ ≫ MERGE

With both orders in (76), both Agree operations will be counterfed since they both apply before Merge. As a result, the &P will not receive a value and thus &P will remain underspecified for gender. The &P derivations for (76a) and (76b) are given in (77) and (78) respectively.

(77)   *&P:* (Move) $\gg$ ↑Agr↑ $\gg$ ↓Agr↓ $\gg$ Merge
$[_{\&P_{[\gamma:\square]}}$ NP$_1$ $_{[\gamma:F]}$ ❸ $[_{\&'}$ &$_{[\#:PL,\ \gamma:\square,\square]}$ NP$_2$ $_{[\gamma:N]}$ ❸ $]]$
      ❶✗ ----¦¦--- ❷✗

(78)   *&P:* (Move) $\gg$ ↓Agr↓ $\gg$ ↑Agr↑ $\gg$ Merge
$[_{\&P_{[\gamma:\square]}}$ NP$_1$ $_{[\gamma:F]}$ ❸ $[_{\&'}$ &$_{[\#:PL,\ \gamma:\square,\square]}$ NP$_2$ $_{[\gamma:N]}$ ❸ $]]$
      ❷✗ ----¦¦--- ❶✗

If ↑Agr↑ precedes ↓Agr↓ as in (77), then the &P moves to Spec-PartP to feed ↑Agr↑. However, the &P node is not specified for a gender value and thus, Part probes inside to find the first conjunct.

(79)   Move $\gg$ ↑Agr↑ $\gg$ ↓Agr↓ $\gg$ (Merge):
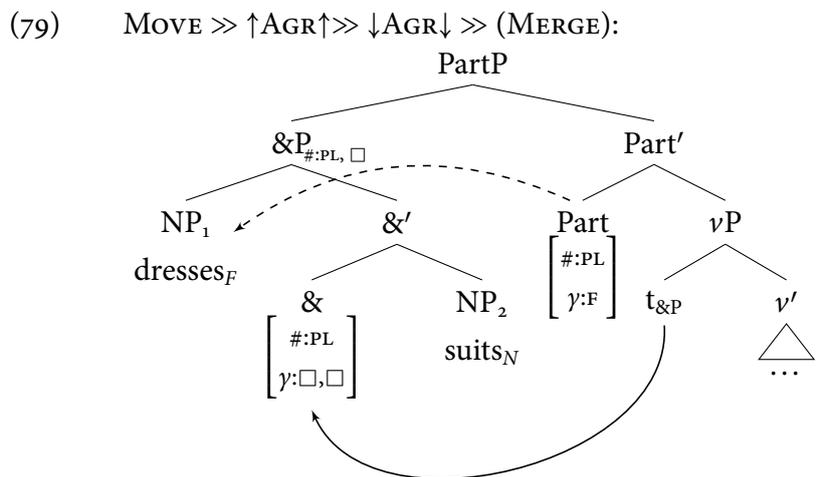
This results in the pattern of Highest Conjunct Agreement that is reported to be possible for some speakers (Marušič et al. 2015; Willer-Gold et al. 2016). With the order of operations in (78), where ↓Agr↓ $\gg$ ↑Agr↑, the conjunct phrase does not move since Move bleeds ↓Agr↓. Consequently, Part agrees with the first conjunct of the postverbal &P (80).

(80) ↓AGR↓ ≫ (↑AGR↑) ≫ (MERGE):
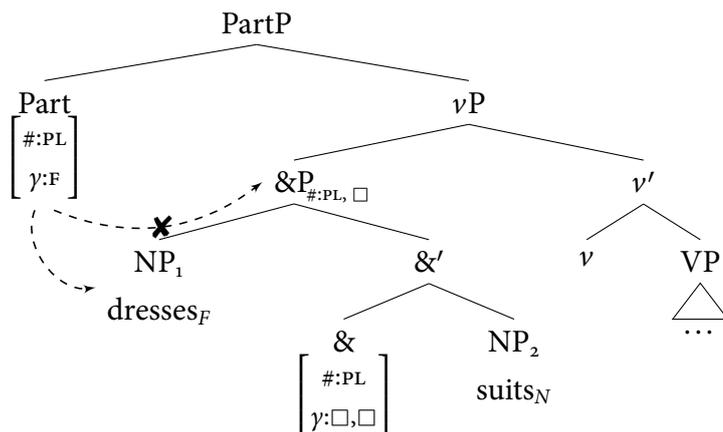
It is interesting that derivations such as (80) have a special status, since they involve genuine agreement with the first conjunct, and not with an &P that has inherited the features of one of its conjuncts. As such, we predict that if the first conjunct were singular, it should be possible to agree with it in number as well as gender. As the following section will show, there are indeed cases such as this.

4.4.6 Number agreement

So far, we have considered coordinations involving plural conjuncts. Furthermore, we have assumed that number on the &P is inherently specified as plural and the auxiliary always agrees with the entire &P in number, even in cases of CCA. This is supported by the fact that conjunction of two singular masculine or feminine nouns always results in the relevant plural agreement (81).

(81) a. [&P Računar   i   štampač] su kupljeni   / *kupljen.
          computer.MSG and printer.MSG are buy.PRT.MPL   buy.PRT.MSG
          'A computer and a printer were bought.'

      b. [&P Zavesa   i   biljka] su ukrašavale   / *ukrašavala   prozor.
          curtain.FSG and plant.FSG are decorate.PRT.FPL   decorate.PRT.FSG window
   'A curtain and a plant decorated the window.'

Furthermore, only default masculine plural agreement is possible with conjunction of singular neuters (82a) or singular nouns with mismatched gender (82b).

(82) a. [&P Selo   i   polje] su se videli   / *videla   / *videlo
          village.NSG and field.NSG are REFL see.PRT.MPL   see.PRT.NPL   see.PRT.NSG
          na karti.
          on map
          'The village and the field could be seen on the map.'

      b. [&P More   i   obala] su se videli   / *videlo   / *videla   na
          sea.NSG and coast.FSG are REFL see.PRT.MPL   see.PRT.NSG   see.PRT.FSG on
          karti.
          map
          'The sea and the coast could be seen on the map.'

Even though singular agreement is generally impossible with coordinate structures, singular agreement has been attested with postverbal First Conjunct Agreement (see Stevanović 1989:125 and Arsenijević & Mitić 2016, also Citko 2004 for similar data from Polish):

(83) ?Na karti se videlo   [&P more i   obala].
      on map REFL see.PRT.NSG   sea.NSG and coast.FSG
      'The sea and the coast could be seen on the map.'

However, the view that the &P is inherently plural seems to be undermined by the possibility of singular agreement in postverbal FCA in (83). If the &P is inherently plural, why can it be ignored for number agreement in examples such as (83)? We argue that &P is still specified as plural here as well, but singular agreement results from economy considerations.[19] Recall the order of operations with counterfeeding of both Agree operations (↓AGR↓ ≫ ↑AGR↑ ≫ MERGE). As we saw in example (80), this order results in postverbal FCA. The result is an &P which bears inherent plural number but no gender value. When the participle probes for gender and number, there are two options. It can target the &P for number and the first conjunct for gender via multiple Agree (as in Bošković's approach). Alternatively, the probe can target the first conjunct for both number and gender as in (84).

(84)
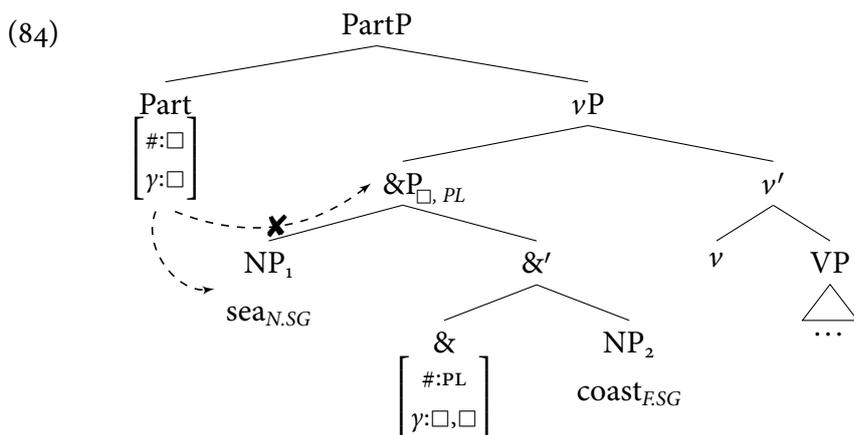
We suggest that this choice is regulated by the *Multitasking* principle in (85) (van Urk & Richards 2015:132, Richards 2016:342).

(85) *Multitasking*:
      If two Agree operations A and B are possible, and the features checked by A are a superset of those checked by B, the grammar prefers A.

---

[19]Supporting evidence for the conjunction 'and' being inherently plural can be seen by comparing it to disjunctions. Arsenijević & Mitić (2016) note that disjunctions allow for singular agreement more readily than conjunctions:

(i)   a. ?Ovu pesmu je otpevala   [&P žena   i   dete].
          this song is sing.PRT.FSG   woman.FSG and child.NSG
          'A woman and a child sang this song.'
      b. Ovu pesmu je otpevala   [&P žena   ili dete].
          this song is sing.PRT.FSG   woman.FSG or child.NSG
          'A woman or a child sang this song.'   (Arsenijević & Mitić 2016:50)

This suggests that while conjunctions are always pre-specified for plural number, disjunctions have the option of being underspecified.

This is an economy condition that favours an Agree operation that provides the probe with the most features. If &P does not inherit any gender features due to counterfeeding of Agree, then Multitasking will result in agreement with the first conjunct. This is different to cases of illusory CCA, which we treat as agreement with an &P which has partially inherited the features of its conjuncts. Here, the Multitasking constraint will not favour agreement with the first conjunct, since the &P node will also be fully specified for both number and gender.

4.5 Ruling out Medial Conjunct Agreement

Recall from examples (10), repeated below, that when the &P contains three conjuncts, agreement with the middle conjunct is impossible.

(86)   [&P Haljine, odela i suknje] su juče prodate /*prodata /
         dress.FPL suit.NPL and skirt.FPL are yesterday sell.PRT.FPL sell.PRT.NPL
       prodati.
        sell.PRT.MPL
       'Dresses, suits and skirts were sold yesterday.'

First, we must consider what the correct structure of multiple coordinations is. There are two main proposals for &Ps with multiple conjuncts (cf. Weisser 2015:149), i.e. multiple specifiers of a single & head (87a) or multiple & heads (87b).

(87)   a.   *One conjunction head with multiple specifiers:*
            [&P dresses [&′ suits [&′ & skirts]]]
       b.   *Multiple conjunction heads:*
            [&P₂ dresses [&′₂ &₂ [&P₁ suits [&′₁ &₁ skirts]]]]

Following Johannessen (1998); Munn (1987); Zoerner (1995); Progovac (1998a,b); Weisser (2015), we adopt the structure in (87b) for the &P with multiple conjuncts (although Bošković 2009 assumes the multiple specifier structure).[20] Patterns of conjunct agreement with such &Ps will

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[20]Two anonymous reviewers point out that another possible structure for conjunctions with multiple NPs is (i), which has been proposed by Wagner (2010:196) on the basis of prosodic evidence.

(i)   [&P₁ [&P₂ NP₁ & NP₂] [&′₁ &₁ NP₃]]

Here &P₂ is in the specifier, while NP₃ is the complement of &P₁. This structure can be ruled out in Serbo-Croatian, however, based on its predictions with respect to Left-Branch Extraction (LBE). As shown by Stjepanović (2015), in coordinate phrases with multiple conjuncts, only the first one can be extracted (*contra* Bošković 2009:474 who claims that none can be extracted):
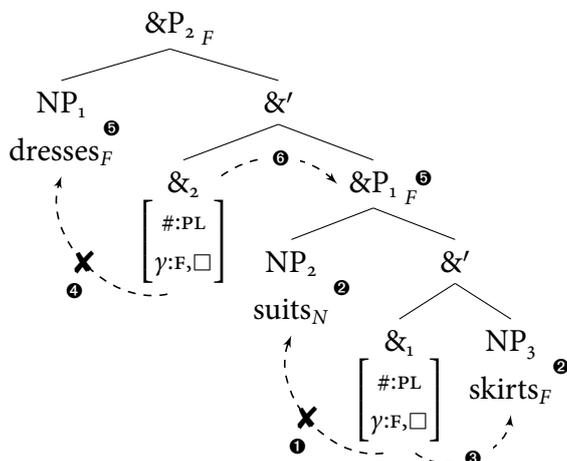
(ii)   Haljine₁ je Marija [&P t₁ (i) odela i suknje] kupila.
          dresses is Marija (and) suits and skirts bought
          'Marija bought dresses, suits and skirts.'

Since the first conjunct is in Spec-&P, this is a subcase of LBE. Treating the first two conjuncts as an &P in the specifier of another &P predicts that it should be possible to LBE-extract the first two conjuncts as a unit. This prediction is not borne out, however, as (iii) shows that such extraction is ungrammatical.

(iii)   *[Haljine i odela]₁ je Marija [t₁ i suknje] kupila.
           dresses and suits is Marija and skirts bought.

be derived by the operations in (43), which are subject to the *Uniform Order of Operations* (36), as before. In the structure in (87), both &-heads function as probes, thus whatever order of operations applies at the &P$_1$, the same order needs to be repeated at &P$_2$, as well as in the rest of the derivation. Consider the following derivation of LCA with three conjuncts for the example in (86):
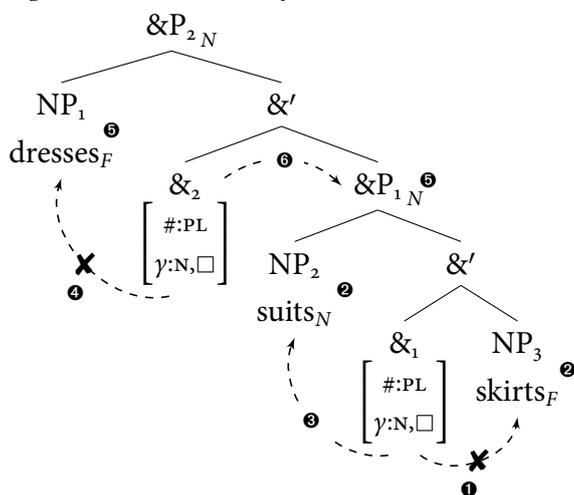
(88)   *LCA:* ↑AGR↑ ≫ MERGE ≫ ↓AGR↓:

&P$_2$ $_F$
NP$_1$ ❺ dresses$_F$ &′
&$_2$ $\begin{bmatrix} \#:\text{PL} \\ \gamma:\text{F},\square \end{bmatrix}$ ❻ → &P$_1$ $_F$ ❺
❹ ✘
NP$_2$ ❷ suits$_N$ &′
&$_1$ $\begin{bmatrix} \#:\text{PL} \\ \gamma:\text{F},\square \end{bmatrix}$ NP$_3$ ❷ skirts$_F$
❶ ✘   ❸

Recall that the order for LCA (↑AGR↑ ≫ MERGE ≫ ↓AGR↓) involves counterfeeding of ↑AGR↑ so only the features of the last conjunct are projected to &P. Given this order of operations, the lower &$_1$ head inherits the gender value of NP$_3$ which is projected to &P$_1$. Subsequently, the agreement with NP$_1$ is counterfed and &$_2$ agrees with &P$_1$, projecting the gender value of NP$_3$ which is then accessible to higher probes.

Due to space limitations, we will not show the derivations for all the other possible patterns, but focus instead on ruling out the unattested pattern of *Medial Conjunct Agreement*. Consider what a derivation would have to look like in order to project only the features of the middle conjunct to &P$_2$. In order derive MCA in (89), &$_1$ would need to inherit the gender feature of the medial conjunct, NP$_2$ by counterfeeding ↓AGR↓. Subsequently, &$_2$ would have to inherit only this feature by agreeing with &P$_1$ (i.e. counterfeeding ↑AGR↑):

(89)   *Impossible derivation of MCA:*

&P$_2$ $_N$
NP$_1$ ❺ dresses$_F$ &′
&$_2$ $\begin{bmatrix} \#:\text{PL} \\ \gamma:\text{N},\square \end{bmatrix}$ ❻ → &P$_1$ $_N$ ❺
❹ ✘
NP$_2$ ❷ suits$_N$ &′
❸
&$_1$ $\begin{bmatrix} \#:\text{PL} \\ \gamma:\text{N},\square \end{bmatrix}$ NP$_3$ ❷ skirts$_F$
❶ ✘

36

However, such a derivation is ruled out by the *Uniform Order of Operations*. As should be clear from (89), the order of operations at &$_1$ requires that ↓Agr↓ precede Merge (90a) (resulting in counterfeeding), whereas the order at &$_2$ requires the reverse order in which ↓Agr↓ follows, and is consequently fed by, Merge (90b):

(90)   &P$_1$: ↓Agr↓ ≫ Merge ≫ ↑Agr↑
         &P$_2$: ↑Agr↑ ≫ Merge ≫ ↓Agr↓

In derivations that keep the given order of operations consistent, it is only possible to have the features of the first or last conjunct percolate all the way to &P$_2$. Consequently, the *Uniform Order of Operations* condition also successfully rules out the unattested pattern of Medial Conjunct Agreement.[21]

5 Additional patterns

5.1 Sandwiched agreement in Slovenian

One agreement strategy that seems to be a challenge for the current approach are cases of *sandwiched agreement* mentioned in Marušič et al. (2015:51,fn.5). In (91), the conjunct phrase is 'sandwiched' between two agreeing participles and each of them shows agreement with linearly closest conjunct.

(91)   Včeraj   so   bile   [&$_P$ krave   in teleta]   prodana.
         yesterday AUX   be.FPL   cow.FPL and calf.NPL sold.NPL
         'Yesterday cows and calves were sold.'

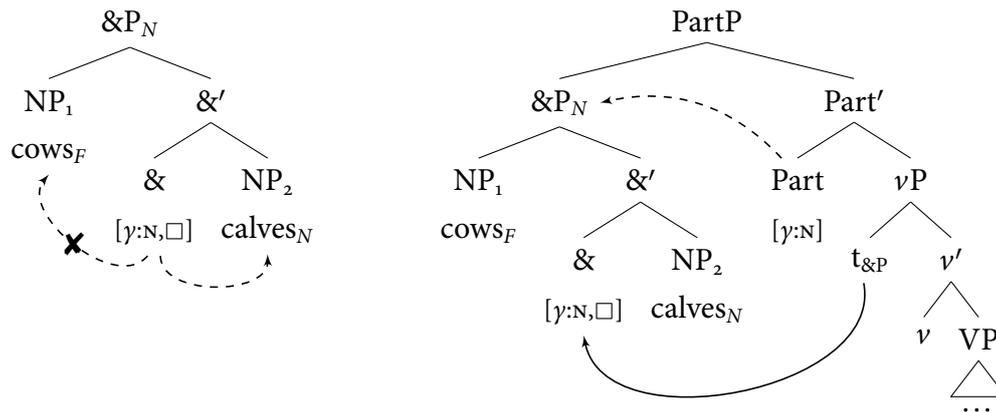   (*Slovenian*, Marušič et al. 2015:51)

In this present account, what looks like CCA is understood as agreement with an &P that has only partially inherited the features of its conjuncts. Thus, we would expect that both participles inherit whichever features were projected to &P and therefore no mismatch. One solution to this problem would be to adopt some notion of 'deactivation', that is, goals of a previous Agree operation are deactivated as goals for further cycles of Agree. This idea plays a central role in previous accounts of closest conjunct agreement in explaining why the probe does not agree with &P (e.g. Bošković 2009; Bhatt & Walkow 2013).
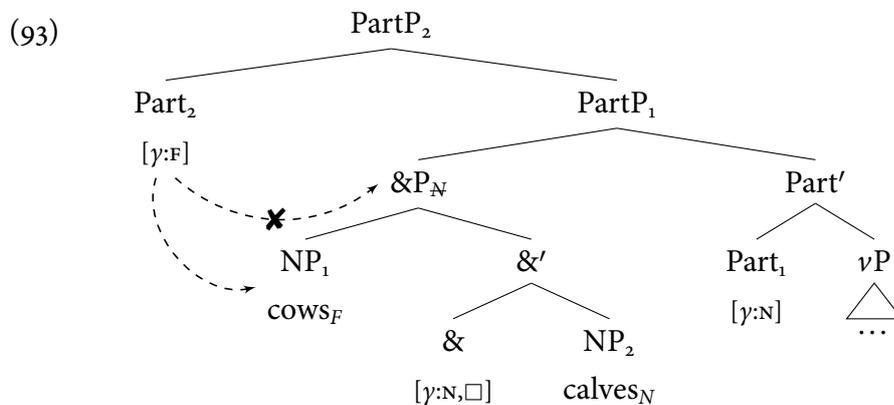
The derivation of (92) could be captured as follows. Let us assume an order of operations with counterfeeding of ↑Agr↑. At &P, only the features of the last conjunct are projected to &P (92). Subsequently at PartP, Move must apply in order to feed ↑Agr↑ as we have seen in previous derivations and Part agrees with the entire &P, thereby giving the impression of LCA (92).

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[21]Interestingly, even if we were to adopt the structure with multiple specifiers suggested in (87a), agreement with the middle conjunct would still be ruled out under present assumptions. Since ↑Agr↑ is defined as m-command, the highest specifier will always be preferred since this is the closest m-commanded goal from the root node. Thus, we rule out *Medial Conjunct Agreement*, regardless of the exact analysis of multiple coordination one wishes to adopt.

(92)   (Move) ≫ ↑Agr↑ ≫ Merge ≫ ↓Agr↓:

$$
\begin{array}{l}
\text{\&P}_N \\
\quad \text{NP}_1 \quad \text{\&}' \\
\quad \text{cows}_F \\
\qquad \text{\&} \quad \text{NP}_2 \\
\qquad [\gamma\text{:N},\square] \quad \text{calves}_N
\end{array}
\qquad
\begin{array}{l}
\text{PartP} \\
\quad \text{\&P}_N \quad\quad \text{Part}' \\
\quad \text{NP}_1 \quad \text{\&}' \quad \text{Part} \quad v\text{P} \\
\quad \text{cows}_F \quad\quad\quad [\gamma\text{:N}] \quad t_{\&P} \quad v' \\
\qquad \text{\&} \quad \text{NP}_2 \quad\quad\quad\quad\quad v \quad \text{VP} \\
\qquad [\gamma\text{:N},\square] \quad \text{calves}_N \quad\quad\quad\quad\quad \ldots
\end{array}
$$

Now, let us assume that the gender feature on &P is now deactivated for later cycles of Agree. When the second participle probes for gender, it can no longer target the deactivated neuter feature on &P, and instead agrees with the first conjunct (93).[22]

(93)

$$
\begin{array}{l}
\text{PartP}_2 \\
\quad \text{Part}_2 \quad\quad\quad \text{PartP}_1 \\
\quad [\gamma\text{:F}] \\
\qquad\quad \text{\&P}_N \quad\quad\quad \text{Part}' \\
\qquad \text{NP}_1 \quad \text{\&}' \quad \text{Part}_1 \quad v\text{P} \\
\qquad \text{cows}_F \quad\quad\quad [\gamma\text{:N}] \quad \ldots \\
\qquad\quad \text{\&} \quad \text{NP}_2 \\
\qquad\quad [\gamma\text{:N},\square] \quad \text{calves}_N
\end{array}
$$

This is what gives the impression of two elements each agreeing with the linearly closest conjunct. Thus, it seems that one way in which languages can vary is whether they allow for features to be accessed again by later cycles of Agree. In section 5.2, we show how this assumption can derive patterns of CCA with complementizers in Dutch.

5.2   Complementizer agreement in Dutch

This section will illustrate how the present system can be extended to instances of CCA with complementizer agreement. In certain dialects of West Germanic languages, complementizers exhibit number agreement with the embedded subject (cf. Haegeman 1992; Zwart 1993; Carstens 2003; van Koppen 2005, 2008; Haegeman & van Koppen 2012):

(94)   Kpeinzen [CP de-s   doow goa-n kommen]
          I.think   that-PL they go-PL come
          'I think that they are going to come.'

(*Lapscheuere Dutch*; Haegeman 1992:61)

---

[22]Note that in order for this derivation to conform to the constraint on *Uniform Order of Operations* in (36), the &P must actually move into Spec-PartP$_2$ where it targetted for ↑Agr↑. We assume that the participle moves to a higher head in extended verbal projection, and thus precedes the conjunct phrase.

As van Koppen (2005) shows, some dialects of Dutch (as well as Bavarian German; cf. Bayer 1984) show a closest conjunct agreement strategy for complementizers. In the Limburgian and Tegelen Dutch varieties, for example, while the verb agrees in plural with the entire &P, the complementizer shows singular agreement with the first conjunct:

(95) Ich dink de-s [$_{\&P}$ toow en Marie] kump.
      I think that-SG you.2SG and Marie come.PL
      'I think that you and Marie will come.'

(*Limburgian*; Haegeman & van Koppen 2012:443)

(96) … de-s [$_{\&P}$ doow en ich] ôs treff-e.
      that-2SG you.2SG and I each.other.1PL meet-PL
      '… that you and I will meet.'

(*Tegelen Dutch*; van Koppen 2005:40)

We could analyze basic instances of complementizer agreement as in (94) as a downward Agree relation with the subject in Spec-TP as in (97) (e.g. van Koppen 2005).

(97) $[_{CP} [_C \text{ de-s }] [_{TP} \text{DP} [_{T'} \text{T} [_{vP} t_{DP} \dots]]]]$

While this is a plausible derivation, it seems to be incompatible with our assumption of the *Uniform Order of Operations* (36). If the subject moves to Spec-TP, it must be to feed ↑AGR↑. If this order of operations were maintained at CP, then we would expect complementizer agreement to actually involve Spec-Head Agreement (cf. Shlonsky 1994), with movement of the subject to Spec-CP.[23] However, we can derive the basic pattern of complementizer agreement with a uniform order of operations (MERGE ≫ ↑AGR↑ ≫ ↓AGR↓) by assuming an articulated C-domain with multiple CP projections (e.g. Rizzi 1997; van Craenenbroeck 2010). On this view, the derivation of (94) would involve ↑AGR↑ for the relevant agreeing heads (T and C) and thus movement into their specifiers. The fact that complementizer precedes the the embedded subject can then be derived by head movement to a higher COMP head in the C-domain (98).[24]

(98) $[_{CP_2} [_{C_2} \text{ de-s}_{PL}] \dots [_{CP_1} \text{DP}_{PL} \dots [_{C_1} t_{-s}] \dots [_{TP} t_{DP} \dots [_T \text{-n}_{PL}] [_{vP} t_{DP} \dots]]]]$

Now, let us consider how we can derive examples of CCA such as (95). The challenge posed by this kind of data is the same as with sandwiched agreement; we have two probes agreeing with different goals. It is clear that an LCA order resulting in percolation of the number features of
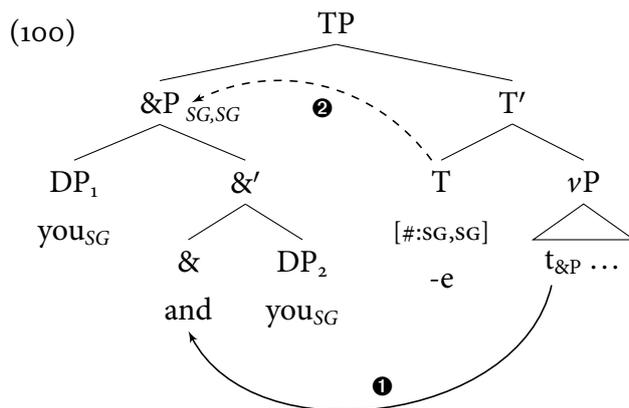
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[23]Another option would be that all operations apply downward and the subject stays *in situ*. Given the fact that clauses introduced by an agreeing complementizer are verb-final in Dutch, it is difficult to determine whether movement to Spec-TP has actually taken place (but see Diesing 1992; Bobaljik & Wurmbrand 2005 for possibly relevant scope diagnostics).

[24]This approach is similar to the analysis of complementizer agreement in Shlonsky (1994), where agreement first takes place in a Spec-Head configuration of an AgrC projection, and this head bearing the agreement morphology subsequently moves to a higher C head.
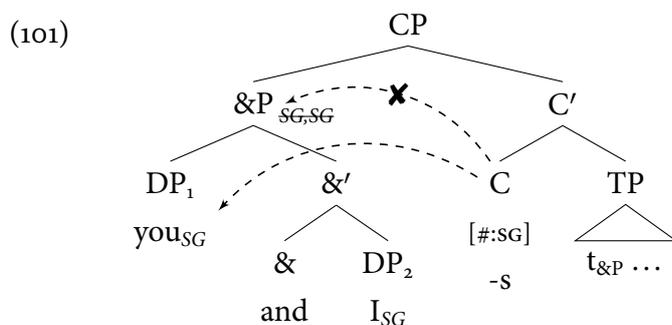
just the first conjunct alone will not allow for plural agreement on the verb. Instead, we can adopt the same solution as for sandwiched agreement in Slovenian: some dialects of Dutch have deactivation of the features of &P after the first cycle of Agree. To illustrate this, let us assume that the following order of operations holds throughout the derivation of (98): MERGE ≫ ↑AGR↑ ≫ ↓AGR↓. At &P, both operations are fed by MERGE and the number features of both conjuncts are projected to &P (99).

(99)

&P$_{SG,SG}$
- DP$_1$ ❶ you$_{SG}$
- &′
  - & and [#:SG,SG] ❷
  - DP$_2$ ❶ I$_{SG}$ ❸
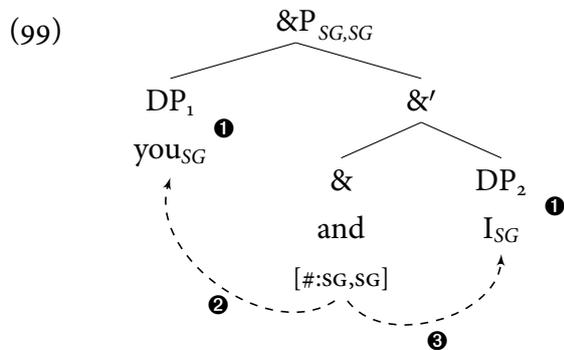
Given early application of ↑AGR↑, MOVE applies to feed ↑AGR↑ and both singular values are copied to T (100) (these are resolved to plural by some later process; cf. Grosz 2015).

(100)

TP
- &P$_{SG,SG}$ ❷
  - DP$_1$ you$_{SG}$
  - &′
    - & and
    - DP$_2$ you$_{SG}$
- T′
  - T [#:SG,SG] -e
  - vP
    - t$_{\&P}$ … ❶

If we now adopt the idea that the features projected to &P are deactivated for the CP cycle, it will be features of the first conjunct which are targetted (101).

(101)

CP
- &P$_{SG,SG}$ ✗
  - DP$_1$ you$_{SG}$
  - &′
    - & and
    - DP$_2$ I$_{SG}$
- C′
  - C [#:SG] -s
  - TP
    - t$_{\&P}$ …

Since only one singular value is copied, the C head shows singular agreement. In a later step, there is head movement to the second complementizer position to derive the correct surface

order (102).[25]

(102)
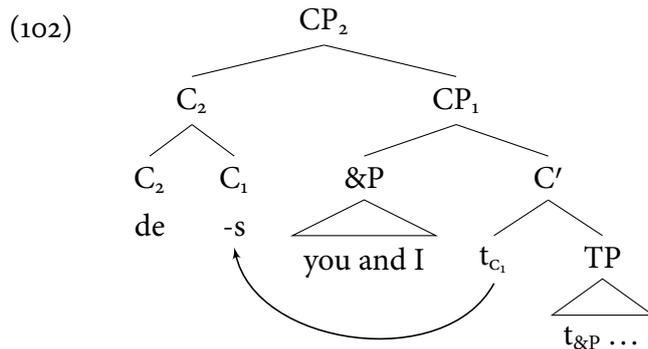
Thus, we can derive the pattern of CCA with complementizer agreement with the additional assumption of deactivation that was also assumed for sandwiched agreement in section 5.1. This is one of the relevant aspects of parametric variation we can expect between languages and dialects. For example, as discussed by van Koppen (2005), there are other dialects of Dutch, which only allow agreement in plural on both the complementizer and verb:

(103) Kpeinzen da-n   [&P Valère en Pol] morgen   goa-n.
       I.think   that-3PL   Valère and Pol tomorrow go-PL
       'I think that Valère and Pol will go tomorrow.'

(*Lapscheure Dutch*; van Koppen 2005:3)

These would then be dialects that lack the deactivation property assumed above, i.e. the features at the &P node remain available for later cycles of Agree.[26] What we notice is that the orders of operations in Dutch are considerably more constrained than in Serbo-Croatian. Since it seems that the verb invariably agrees in plural with the whole conjunct phrase, Dutch only permits transparent interactions (i.e. where MERGE feeds both Agree operations).[27]

---

[25]We have not yet mentioned where head movement fits into the current system. One option is that it is feature driven in the syntax (e.g. Müller 2007; Georgi & Müller 2010) and then would be checked by appyling MOVE. Alternatively, it could be viewed as a PF process (Chomsky 1995; Merchant 2001; Schloorlemmer & Temmerman 2012; Platzack 2013). Since head movement does not play a crucial role for the phenomena under discussion, we do not commit to either of these views.

[26]This is an alternative to the approach by van Koppen (2005), who assumes that the possibility of agreeing with the first conjunct is determined by the morphological specificity of the resulting agreement at PF. If the exponent realizing agreement with the coordinate (plural) is less specific than the one realizing the first conjunct (singular), then agreement with the first conjunct is preferred. In our account, there is no reference to morphological specificity (since Agree is purely syntactic) and deactivation is simply parametrized between dialects.

[27]There still remains the question of how we can account for patterns of upward complementizer agreement in Bantu, where the complementizer agrees with the subject of the matrix clause (cf. Baker 2008; Diercks 2010, 2013; Carstens 2016). At present, the exact nature conjunct agreement in Bantu is not well-understood. However, there have been some recent descriptions of a number of languages showing that some of the variety of patterns found in Slavic are also attested, e.g. Last Conjunct Agreement in Lubukusu (i) (also cf. Mitchley 2015; Diercks et al. 2015).

(i)   [&P Ki-mi-rongoro nende ka-ma-ua] ka-a-loma [CP ka-li e-fula y-a-kwa]
           4-4-trees   and   6-6-flowers 6s-PST-say   6-that 9-rain 9s-PST-fall
        'Trees and flowers said that the rain fell.'   (Diercks 2010:300)

The challenge for the present account would be to see whether one can ascertain any interesting correlation with the position of the matrix subject &P and the type of agreement strategy. However, if Diercks' (2010; 2013) 'indirect' anaphoric approach to upward complementizer agreement is correct, then the patterns of agreement we find with

5.3   Merge-over-Move and conjunct agreement in English

In general, the various degrees of parametric variation in this approach come from the idiosyncratic, language-specific constraints that are imposed on the logically possible orders of operations. It seems that Serbo-Croatian is a somewhat extreme case in that it allows for flexible orders of almost all operations. Other languages seem to be considerably more conservative in the degree of flexibility regarding the order in which operations are permitted to apply, as seems to be the case with Dutch. For English, it is well-known that agreement is not necessarily contingent on movement to Spec-TP (i.e. feeding of ↑AGR↑) since ↓AGR↓ can apply if an expletive is merged (104b).

(104)   a.   Firefighters are in the building.
        b.   There are firefighters in the building.

This can be accounted for by assuming that English in principle allows for either the orders ↑AGR↑ ≫ ↓AGR↓ or ↓AGR↓ ≫ ↑AGR↑. The application of a particular order than depends on whether an expletive is present in the numeration: if there is no expletive in the derivation, then MOVE applies in order to feed ↑AGR↑ with the order ↑AGR↑ ≫ ↓AGR↓. Derivations with an expletive *there* are only compatible with the order ↓AGR↓ ≫ ↑AGR↑ under the assumption that expletives are φ-deficient (e.g. Chomsky 1995), as ↑AGR↑ would fail to find φ-features if it applied first.

   The present approach can also offer a different explanation for the classic Merge-over-Move paradigm given in (105) (cf. Chomsky 1995, 2000; Frampton & Gutmann 1999; Deal 2009; Castillo et al. 2009).

(105)   a.   [$_{TP}$ Someone$_1$ seems [$_{TP}$ t$_1$ to [$_{vP}$ be t$_1$ in the room]]]
        b.   [$_{TP}$ There seems [$_{TP}$ to [$_{vP}$ be someone in the room]]]
   c.   *[$_{TP}$ There seems [$_{TP}$ someone$_1$ to [$_{vP}$ be t$_1$ in the room]]]

Without recounting all the details, the central puzzle involves how one can block movement of *someone* in (105c) if an expletive is also present in the numeration. The assumption of a *Uniform Order of Operations* has a potentially interesting explanation here. Let us maintain our previous assumption that EPP-movement is driven by the need to feed ↑AGR↑ and, as previously mentioned, expletive *there* does not bear φ-features. Furthermore, we can assume that either the order ↑AGR↑ ≫ ↓AGR↓ or ↓AGR↓ ≫ ↑AGR↑ is possible, but this order must apply at each T head. The derivation of (105a) requires ↑AGR↑ ≫ ↓AGR↓ and each T head probes upward and thus MOVE applies in each case (106).

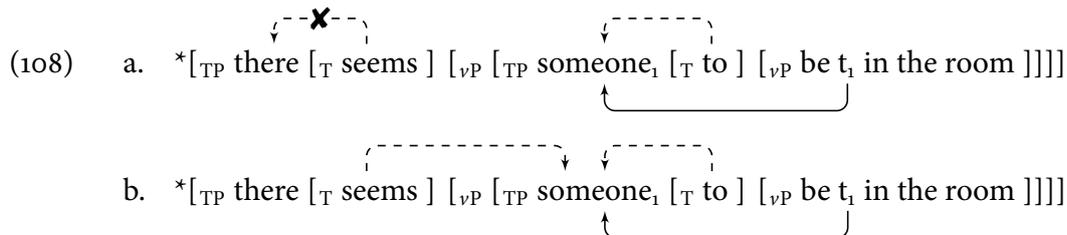(106)   [$_{TP}$ someone [$_T$ seems] [$_{vP}$ [$_{TP}$ t$_1$ [$_T$ to] [$_{vP}$ be t$_1$ in the room]]]]

If the reverse order ↓AGR↓ ≫ ↑AGR↑ holds, then no EPP-movement is possible and the subject stays in situ with the expletive *there* merged in the highest TP position (we assume it is only

coordinate structures may ultimately tell us more about the nature of this dependency than the general mechanism of CCA (cf. Diercks 2010:300,fn.11).

present in the lexical subarray of the higher phase; following Chomsky 2000). This derives the sentence in (105b).

(107)   [$_{TP}$ there [$_T$ seems] [$_{vP}$ [$_{TP}$ [$_T$ to] [$_{vP}$ be someone in the room]]]]
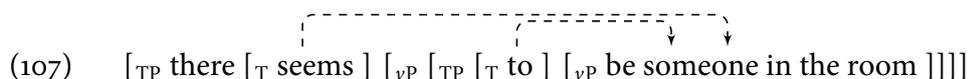
Interestingly, the possible derivations of the ungrammatical example in (105c) require either that the highest T agrees with an expletive (resulting in a failure to value φ-features) (108a), or the Uniform of Order of Operations must be violated (108b).

(108)   a.   *[$_{TP}$ there [$_T$ seems] [$_{vP}$ [$_{TP}$ someone$_1$ [$_T$ to] [$_{vP}$ be t$_1$ in the room]]]]

         b.   *[$_{TP}$ there [$_T$ seems] [$_{vP}$ [$_{TP}$ someone$_1$ [$_T$ to] [$_{vP}$ be t$_1$ in the room]]]]

If an expletive is merged, then probing down is the only way in which matrix T can successfully find a goal. However, this violates the order of operations fixed at the lower TP cycle. Thus, it seems that the Uniform Order of Operations does have some independent motivation in English too, where it can offer a novel explanation for the Merge-over-Move puzzle.

As for coordinations, it is well-known that coordinated singular DPs in English show a peculiar pattern of agreement (Sobin 1997, 2014; Schütze 1999; Munn 1999; Crone & Krejci 2016). 'Resolved' plural agreement is preferred if the &P is in preverbal position (109a), whereas singular agreement is preferred if the &P stays in postverbal position (109b).

(109)   a.   [$_{\&P}$ A book and a pen] {*is / are} on the table.
         b.   There {is / *?are} [$_{\&P}$ a book and a pen] on the table.   (Sobin 2014:386)

We can derive these two examples as follows. For (109a), we need the order in which ↑Agr↑ precedes ↓Agr↓ and both operations are fed, leading to both singular features [sg] being projected to the &P (110). Given the order ↑Agr↑ before ↓Agr↓, Move applies to feed ↑Agr↑, which copies both singular values to T, which are spelled out as plural (Merge of an expletive is therefore blocked with this order).

(110)   (Move) ≫ Merge ≫ ↑Agr↑ ≫ ↓Agr↓:
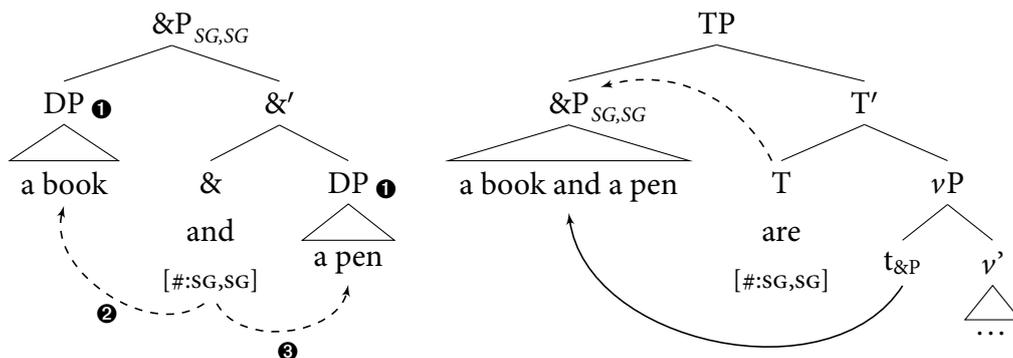
In order to derive (109b), we need the order in (111) in which ↓Agr↓ applies early and is counterfed. Consequently, & acquires only one singular value. At the TP level, Move is not licensed since ↓Agr↓ is the first Agree operation to apply and this copies the [sg] feature present on &P, resulting in singular agreement.
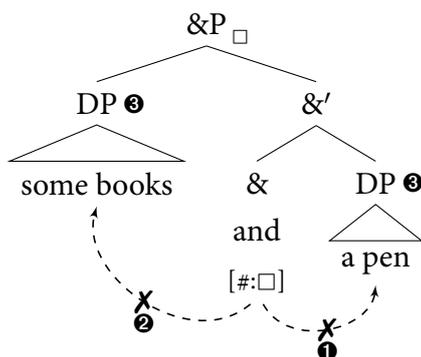
(111)   ↓Agr↓ ≫ Merge ≫ ↑Agr↑:
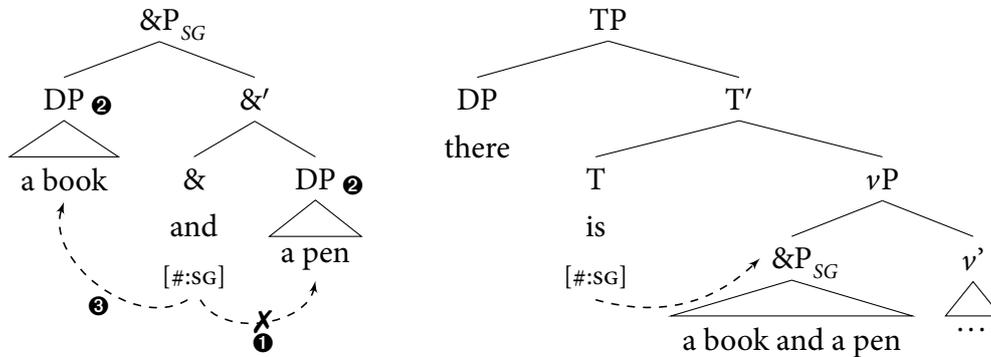
However, some additional data introduce a complication. English also has something resembling a genuine CCA strategy, shown by the results of the a survey in Sobin (1997:341f.):

(112)   a.   There {is / *are} [&P a pen and some books] on the table.
         b.   There {?*is / are} [&P some books and a pen] on the table.
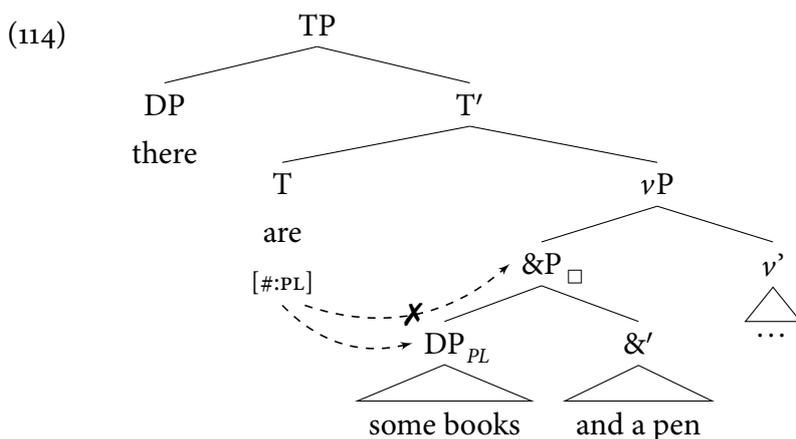
(Schütze 1999:470)

In postverbal position, the verb can agree with a plural first conjunct, as shown in (112b). Recall that a genuine postverbal FCA strategy with a single conjunct we discussed involves counterfeeding of both Agree operations with the order ↓Agr↓ ≫ ↑Agr↑ ≫ Merge. As in previous cases, when both Agree operations are counterfed at the level of the conjunct phrase, no value is projected to &P (113).

(113)   ↓Agr↓ ≫ ↑Agr↑ ≫ Merge:

The first operation to apply at TP (↓Agr↓) will directly target the DP in the specifier of &P, yielding postverbal FCA (114).

44

(114)

```
              TP
          ╱        ╲
        DP          T′
       there      ╱    ╲
                 T        vP
                are    ╱     ╲
              [#:PL]  &P□      v′
                    ╱   ╲     ╱╲
                 DP_PL   &′   ···
                 ╱╲     ╱╲
            some books  and a pen
```

In light of this, we can conclude that English only permits the following orders:

(115) a. (Move) ≫ Merge ≫ ↑Agr↑ ≫ ↓Agr↓

       b. ↓Agr↓ ≫ Merge ≫ ↑Agr↑

       c. ↓Agr↓ ≫ ↑Agr↑ ≫ Merge

Importantly, this is still compatible with the earlier claim that English allows for both orders of ↑Agr↑ and ↓Agr↓. It also still holds that the order ↑Agr↑ ≫ ↓Agr↓ forces Move to apply since Merge of an expletive *there* cannot value the features of T due to its φ-deficiency.

6   Conclusion

In this paper, we have argued that the notion of 'closest' in Closest Conjunct Agreement is illusory. What may look like linearly conditioned agreement on the surface can instead be viewed as agreement with a conjunct phrase that has partially inherited the features of a single conjunct. To derive the various patterns of conjunct agreement in Serbo-Croatian, we proposed that there is flexibility in the order in which basic syntactic operations are carried out. This results in possibly opaque orderings in which the expected effects of certain operations fail to materialize due to their position relative to other operations in the derivation.

The assumption that a given order of operations remains fixed for later cycles was shown to make correct predictions with regard to the available patterns of CCa in Serbo-Croatian. In particular, it was shown that the unattested patterns of postverbal Last Conjunct Agreement is ruled out due to the fact that the order of operations required to derive agreement of & with only the last conjunct enforce movement of the &P at later cycles. Thus, we can derive the possibility for a particular pattern to surface in pre- or postverbal position without recourse to an arbirary EPP feature (cf. Bošković 2009). Furthermore, the impossibility of agreement with the medial conjunct in a conjunct phrase was shown to follow from the *Uniform Order of Operations* condition, since percolating only the features of a medial conjunct requires contradictory orders on the respective & heads.

The main virtue of this approach is that it is possible to derive all and only the patterns of conjunct agreement in SC from the factorial typology of four basic syntactic operations. Crucially, we correctly rule out impossible patterns such as postverbal LCA. Another advantage of

this approach over recent ones is that we have a unified treatment of Closest Conjunct Agreement and Resolved Agreement strategies. Resolved or default agreement is widely treated as agreement with the entire conjunct phrase. In the present approach, this is also true of CCA. However, we have a principled explanation for the conditions under which Resolved Agreement is possible (i.e. when both Agree operations are successful), which is less clear in competing approaches (Bhatt & Walkow 2013; Marušič et al. 2015). What is more, it was shown how this general approach can be extended to similar phenomena involving CCA with multiple participles in Slovenian, complementizers in Dutch varieties, as well as conjunct agreement facts in English.

As the empirical domain surrounding conjunct agreement becomes clearer, one will inevitably require a system powerful enough to handle a degree of variability across languages. In general, the present system does seem to have the necessary potential to derive a number of patterns. It is then the task of future research to uncover the restrictions on these orders in a given language. To conclude, the main message of this paper is that, although the phenomenon of Closest Conjunct Agreement may seem to require some sensitivity to linear order in the agreement process, we have shown that this step is not necessary. For gender agreement in Serbo-Croatian, all the relevant facts can be explained in syntax proper, without reference to linear closeness.

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