

# Closest Conjunct Agreement is an Illusion\*

Andrew Murphy & Zorica Puškar

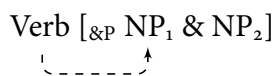
andrew.murphy@uni-leipzig.de zorica.puskar@uni-leipzig.de

Universität Leipzig

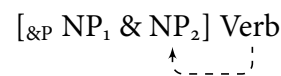
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**Problem:** Closest Conjunct Agreement seems to be sensitive to linear proximity instead of hierarchical structure and c-command.

Verb [<sub>&P</sub> NP<sub>1</sub> & NP<sub>2</sub>]



[<sub>&P</sub> NP<sub>1</sub> & NP<sub>2</sub>] Verb



To deal with this, recent approaches extend the agreement process to PF to make it sensitive to linear order.

**Claim:** On the basis of data from Serbo-Croatian, we argue that this step is not necessary and that all patterns of conjunct agreement can be derived from the interaction of syntactic operations.

- All patterns of conjunct agreement are derived in narrow syntax, from the order in which the basic operations Agree, Merge and Move apply at &P, and later cycles.
- Depending on the order of the operations, the &P can inherit and project the features of both, one, or none of its arguments.
- Result: the impression of agreement with a single conjunct is in fact agreement with a whole conjunct phrase which has inherited the features of only one of its conjuncts.
- Repeating a given order of operations applied inside the &P at later cycles of the derivation makes correct predictions about the possibility for each pattern to occur either pre- or postverbally.

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## 1 Patterns of conjunct agreement in Serbo-Croatian

### 1.1 Resolved Agreement

Resolved Agreement (RA) manifests itself either as agreement with the same gender values when conjuncts match in gender, or as default agreement (masculine plural for Serbo-Croatian) when gender features on conjuncts do not match. It occurs both when the subject is pre- and postverbal.

- (1) [<sub>&P</sub> Otac i sin] su gledali utakmicu.  
 father.MSG and son.MSG are watch.PRT.MPL game  
 ‘Father and son watched the game.’ (M+M=M)
- (2) [<sub>&P</sub> Sve majke i kćerke] su išle po prodavnicama.  
 all mother.FPL and daughter.FPL are go.PRT.FPL in shops  
 ‘All mothers and daughters went to the shops.’ (F+F=F)
- (3) [<sub>&P</sub> 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)
- (4) Priredbi su prisustvovali [<sub>&P</sub> deca i učiteljice].  
 play are attend.MPL child.NPL and teacher.FPL  
 ‘Children and teachers attended the play.’ (M=N+F)

### 1.2 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.

- (5) [<sub>&P</sub> 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) [<sub>&P</sub> 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, there are no attested examples of postverbal Last Conjunct Agreement or *Lowest Conjunct Agreement*:

- (7) \*Juče su prodate [<sub>&P</sub> 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)

### 1.3 First Conjunct Agreement

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

- (8) Po dvorištu su razdragano ključale [<sub>&P</sub> kokoške i pilići].  
 across yard are cheerfully peck.PRT.FPL hen.FPL and chicken.MPL  
 'Hens and chicken pecked cheerfully in the yard.' (F=F+M)

However, number of speakers of preverbal FCA (i.e. *Highest Conjunct Agreement*). In this case, the verb agrees with the highest conjunct, i.e. with the first conjunct in a preverbal &P (Marušić et al. 2015; Willer-Gold et al. 2015).

- (9) % [<sub>&P</sub> Krave i telad] su mirno pasle po polju.  
 cow.FPL and calf.N are peacefully graze.PRT.FPL across field  
 'Cows and calves grazed peacefully in the field.' (%F+N=F)

#### 1.4 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 (*Medial Conjunct Agreement*):

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

- (11) Juče su prodate / \*prodata / prodati [<sub>&P</sub> haljine, odela i suknje].  
 yesterday are sell.PRT.FPL sell.PRT.NPL sell.PRT.MPL dress.FPL suit.NPL and 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.

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

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

## 2 Previous Accounts

### 2.1 CCA in syntax: Bošković (2009)

Bošković (2009) develops an account of CCA in Narrow syntax:

- (13) [<sub>&P</sub> 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 [<sub>&P</sub> 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.'

*Derivation of LCA (13):*

*Step 1:* 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) [<sub>PartP</sub> Part<sub>[uφ:]</sub> ... [<sub>&P<sub>NUM</sub></sub> NP1<sub>GEN</sub> & NP2<sub>GEN</sub> ]]

*Step 2:* PartP has an EPP feature and Pied-Piping of the subject is required. However, Pied-Piping of the subject fails due to ambiguity of the target for movement (either &P or NP1 can be moved) and they are assumed to count as equidistant.

- (16) [<sub>PartP</sub> Part<sub>[uφ:], EPP</sub> ... [<sub>&P<sub>NUM</sub></sub> NP1<sub>GEN:N</sub> & NP2<sub>GEN:F</sub> ]]

*Step 3:* 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) [<sub>PartP</sub> Part<sub>[uφ:F]</sub> ... [<sub>&P<sub>NUM</sub></sub> NP1<sub>GEN:N</sub> & NP2<sub>GEN:F</sub> ]]

*Step 4:* The probe bears an EPP feature. Since NP<sub>2</sub> cannot be extracted, the only option is to move the whole &P to subject position, which results in the LCA pattern.

- (18) [<sub>PartP</sub> [<sub>&P<sub>NUM</sub></sub> NP1<sub>GEN:N</sub> & NP2<sub>GEN:F</sub> ] Part<sub>[uφ:F]</sub> ... t<sub>&P</sub> ]

The derivation of FCA in (14) is derived if Part does not bear an EPP-feature. Then the problem in (16) does not arise and the participle agrees with the first conjunct in gender (N) and the &P in number (PL).

*Some empirical problems with Bošković's account:*

- There is no way to capture Resolved Agreement in this system (since gender agreement is never with &P). Bošković side-steps this issue (Bošković 459,fn.4 2009).
- This account assumes that the only difference between FCA and LCA is whether EPP-movement, and therefore Pied-Piping, is required. Thus, LCA should always be preverbal, whereas FCA should be restricted to postverbal positions (no Pied-Piping). However, we have seen this has been demonstrated experimentally to be a legitimate agreement for speakers of Slovenian (Marušič et al. 2015) and Serbo-Croatian (see Willer-Gold et al. 2015).

- (19) % [<sub>&P</sub> Krave i telad] su mirno pasle po polju.  
 cow.FPL and calf.N are peacefully graze.PRT.FPL across field  
 'Cows and calves grazed peacefully in the field.' (%F+N=F)

This pattern cannot be derived under Bošković's account.

- Recall that agreement with the medial conjunct is never possible:

- (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.’
- 

In Bošković’s analysis of FCA, the first conjunct is deactivated as a goal for the second cycle of Agree, and the next lower conjunct is targeted. This incorrectly predicts preverbal MCA to be possible:

- (21)  $[\text{PartP Part}_{[u\phi:N, EPP]} \dots [\&P_{\text{NUM}} \text{NP1}_{\text{GEN:F}} \& \text{NP2}_{\text{GEN:N}} \& \text{NP3}_{\text{GEN:F}} ]]$   
 (22)  $[\text{PartP } [\&P_{\text{NUM}} \text{NP1}_{\text{GEN:F}} \& \text{NP2}_{\text{GEN:N}} \& \text{NP3}_{\text{GEN:F}} ] \text{Part}_{[u\phi:N, EPP]} \dots t_{\&P}]$
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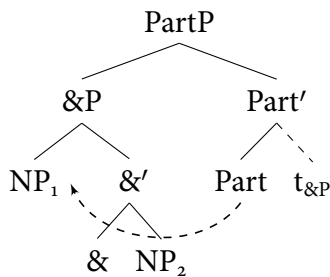
### 2.2 CCA in syntax and PF (Marušič et al. 2015)

More recent approaches (e.g. Marušič et al. 2015 and Bhatt & Walkow 2013) assume that CCA requires at least part of the agreement process to take place at PF so it can be made sensitive to linear order.

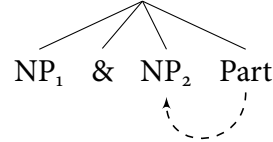
Marušič et al. (2015) assume that agreement (transfer of  $\phi$ -features) from the ‘closest conjunct’ can target either the hierarchically, or linearly closest conjunct depending on when it happens: pre-linearization (syntax) or post-linearization (PF):

CCA with pre-verbal  $\&P$ :

- (23) Pre-linearization (HCA):

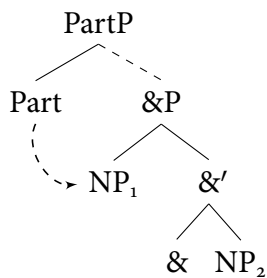


- (24) Post-linearization (LCA):

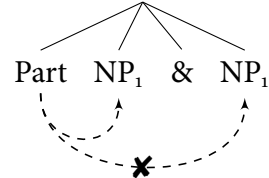


CCA with post-verbal  $\&P$ :

- (25) Pre-linearization (FCA):



- (26) Post-linearization (FCA):



Issues with PF-based accounts:

- If the verb simply ‘agrees with linearly closest conjunct’ (Marušič et al. 2015:60), then we may expect attraction-like effects with post-nominal modifiers:

- (27) Crteži šuma i slike jezera su prodate/\*prodata.  
 drawing.MPL forest.GEN.FPL and painting.FPL lake.GEN.NPL are sell.PRT.FPL/sell.PRT.NPL  
 'Drawings of forests and pictures of lakes were sold.'

- How much access does PF have to syntax-related information like constituency, c-command in a linearized structure?
  - How does it know which NP to target? (Agree-Link vs. Agree-Copy; cf. Arregi & Nevins 2012; Bhatt & Walkow 2013; Smith 2015)
- Resolved Agreement requires that speakers have multiple grammars – ‘No-Peeking Grammars’ that cannot probe inside the &P, and those that can.  
*Result:* Each strategy of conjunct agreement corresponds to a different grammar.
  - *Pseudo-syntax at PF:* Problematic syntactic notions are shifted to PF, e.g. *head movement*; (Chomsky 1995; Merchant 2001; Schloorlemmer & Temmerman 2012; Platzack 2013), *extraposition* (Chomsky 1986; Rochemont 1985; Truckenbrodt 1995), *case and agreement*; (McFadden 2004; Bobaljik 2008; Baker & Kramer 2014).

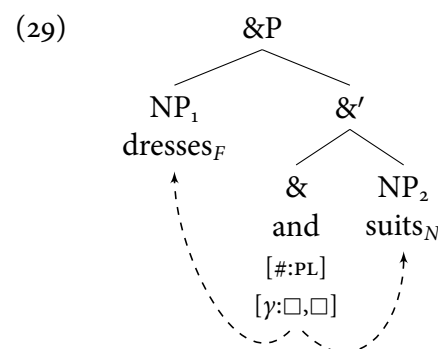
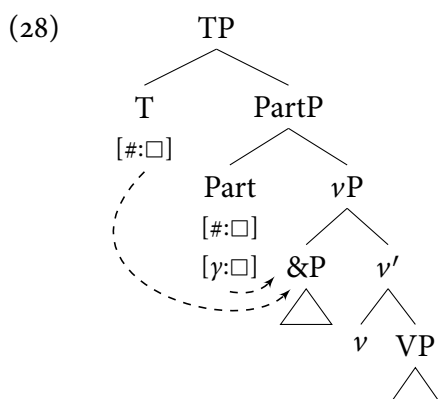
### 3 Deriving Conjunct Agreement in Narrow Syntax

- *Basic idea:* Conjunct agreement is agreement with an &P that has inherited some or all of the features of its conjuncts.
- Unified account of RA and CCA (no competing grammars).
- It can derive all and only those patterns of agreement we find in SC.
- It does not make reference to linear closeness.

#### 3.1 Theoretical assumptions

##### 3.1.1 Clause structure

- Since auxiliaries only show person/number agreement, whereas participles show number and gender agreement, we assume the relevant ‘articulated’ probes ( $\gamma$  for gender, and # for number; cf. Bejar 2003; Preminger 2014).
- The conjunct phrase (&P) can ‘compute’ its own gender by agreeing with each of its conjuncts in gender (conjunct phrases are inherently valued as plural):



### 3.1.2 Single vs. multi-value probes

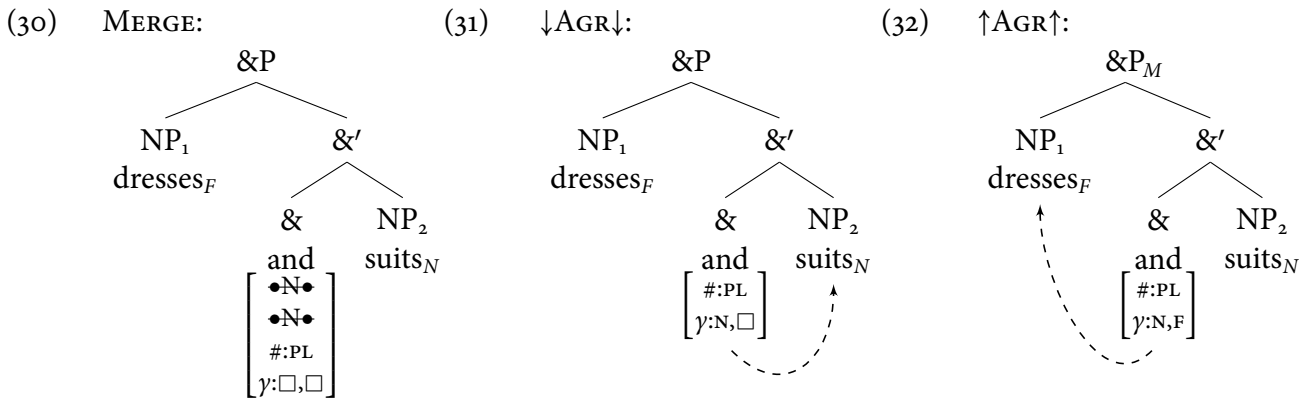
- We adopt a distinction between *single-value probes* such as gender on T ( $[\gamma:\square]$ ) and *multi-value probes* gender on & ( $[\gamma:\square,\square]$ ).
- Since & targets multiple goals for gender agreement, we assume that its gender feature can hold more than one value (cf. case stacking approaches; Assmann et al. 2014; Zaleska 2015).
- For this reason, such probes can afford to have one Agree operation fail and are therefore *fallible* in the sense of Preminger (2014). Single-value probes are not fallible.

### 3.1.3 Elementary syntactic operations

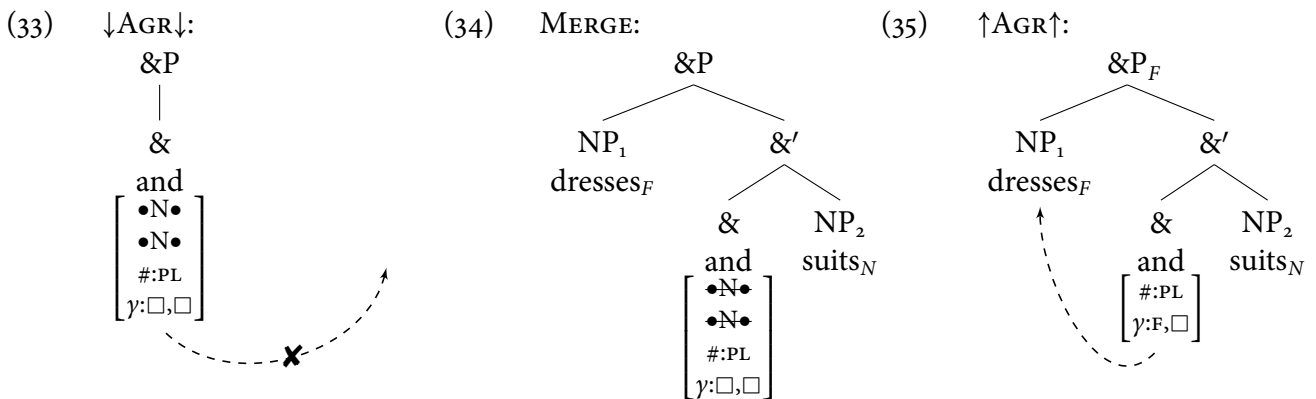
We assume that features on syntactic objects can be checked by one of four elementary syntactic operations:

- ➊ MERGE – (External Merge) checks (c-)selectional features
- ➋ MOVE – (Internal Merge) applies freely, but only if it has a (positive) effect on outcome (cf. Chomsky 2001:6of. on Object Shift)
- ➌  $\downarrow\text{AGR}\downarrow$  – (Downward Agree) values a feature from a goal c-commanded by the probe
- ➍  $\uparrow\text{AGR}\uparrow$  – (Spec-Head Agree) values a feature from a goal m-commanded by the probe

These operations all apply in a given order, but operations may underapply (apply vacuously):



Application of operations in a different order derives a different result:



### 3.1.4 Uniform order of operations

A crucial assumption is that the order of operations applying at a given cycle of the derivation must be maintained throughout the derivation (see Assmann et al. 2015 for a similar assumption).

(36) *Uniform Order of Operations:*

If the order of operations  $\alpha \gg \beta \gg \gamma$  holds at a given stage of the derivation  $s$ , then there can be no stage of the derivation  $s_{n+1}$  which does not conform to this order.

### 3.1.5 Order of operations

- The four operations we assumed can apply in any order (but it remains fixed for the derivation).
- Furthermore, we assume that MOVE always applies first (or not at all). Recall that the patterns that we want to derive are the following:

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

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

- The factorial typology of operations derives the following patterns:

(38) *Possible orderings of operations for conjunct agreement:*

(MOVE)  $\gg$  MERGE  $\gg$   $\uparrow$ AGR $\uparrow$   $\gg$   $\downarrow$ AGR $\downarrow$   $\rightarrow$  Resolved Agreement (preverbal)  
(MOVE)  $\gg$  MERGE  $\gg$   $\downarrow$ AGR $\downarrow$   $\gg$   $\uparrow$ AGR $\uparrow$   $\rightarrow$  Resolved Agreement (postverbal)  
(MOVE)  $\gg$   $\uparrow$ AGR $\uparrow$   $\gg$  MERGE  $\gg$   $\downarrow$ AGR $\downarrow$   $\rightarrow$  LCA (preverbal)  
(MOVE)  $\gg$   $\downarrow$ AGR $\downarrow$   $\gg$  MERGE  $\gg$   $\uparrow$ AGR $\uparrow$   $\rightarrow$  FCA (postverbal)  
(MOVE)  $\gg$   $\downarrow$ AGR $\downarrow$   $\gg$   $\uparrow$ AGR $\uparrow$   $\gg$  MERGE  $\rightarrow$  FCA (postverbal)  
(MOVE)  $\gg$   $\uparrow$ AGR $\uparrow$   $\gg$   $\downarrow$ AGR $\downarrow$   $\gg$  MERGE  $\rightarrow$  FCA (preverbal)

- Note that there is no order that leads to postverbal LCA!

## 3.2 Resolved Agreement

Resolved Agreement with mismatching gender features (e.g. N and F) is masculine plural.

(39)  $\downarrow$  { }  
[ $\&$ 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)

(40) { }  
Priredbi su prisustvovali [ $\&$ P deca i učiteljice].  
play are attend.MPL child.NPL and teacher.FPL  
‘Children and teachers attended the play.’ (M=N+F)

The  $\&$ P agrees with both arguments and the conflicting features are resolved to masculine in the post-syntax (e.g. via impoverishment or readjustment rules).



(41) *Orders for Resolved Agreement:*

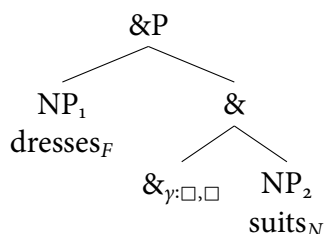
- a. (MOVE) >> MERGE >>  $\uparrow\text{AGR}\uparrow$  >>  $\downarrow\text{AGR}\downarrow$   $\rightarrow$  Preverbal RA
- b. (MOVE) >> MERGE >>  $\downarrow\text{AGR}\downarrow$  >>  $\uparrow\text{AGR}\uparrow$   $\rightarrow$  Postverbal RA

### 3.2.1 Preverbal Resolved Agreement

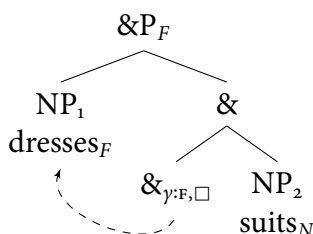
*Operations at the &P level:*

1. MOVE applies vacuously at the &P (no effect on outcome).
2. MERGE applies, where the &-head merges its two argument NPs (42).
3.  $\uparrow\text{AGR}\uparrow$  applies and the & head copies the gender value from the higher NP (43).
4.  $\downarrow\text{AGR}\downarrow$  applies (44) and the & head copies the value from the lower NP.

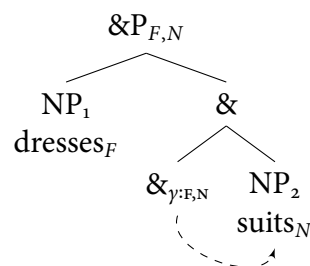
(42) MERGE:



(43)  $\uparrow\text{AGR}\uparrow$ :



(44)  $\downarrow\text{AGR}\downarrow$ :



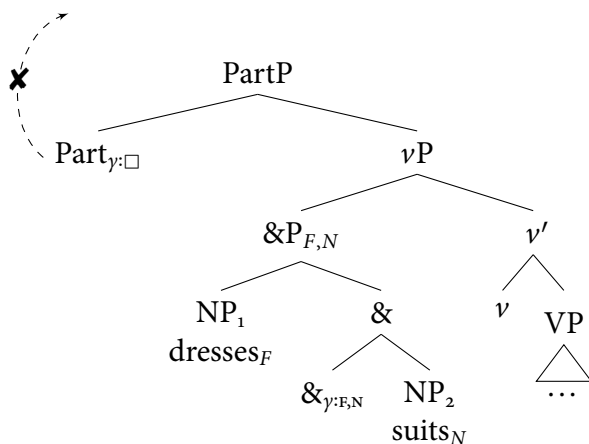
After Agree has taken place, the features of the conjuncts are present at &P and available for agreement with higher heads. Since there is no single exponent for two different gender values (N+F), they are resolved to masculine. We assume this is done in the post-syntactic component, via Impoverishment before Vocabulary Insertion, but leave this issue for further research.

*Operations at the PartP and TP level:*

Two possibilities:

1. If MOVE does not apply:
  - $\uparrow\text{AGR}\uparrow$  will probe upwards and not find a goal:

(45) *PartP*: (MERGE) >>  $\uparrow\text{AGR}\uparrow$  >> ( $\downarrow\text{AGR}\downarrow$ ):

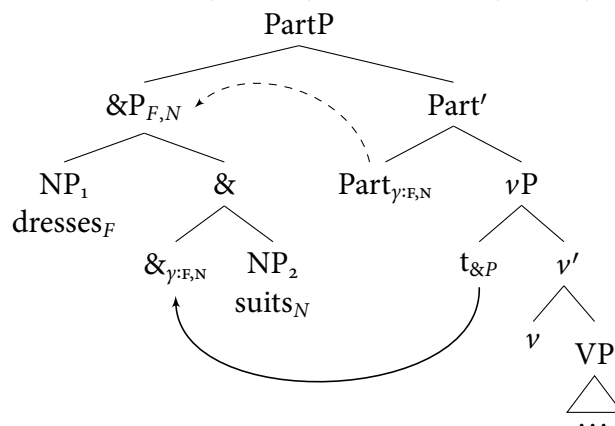


- Since gender on Part is a single-value probe, failure to find a goal results in a crash.

2. If MOVE does apply,

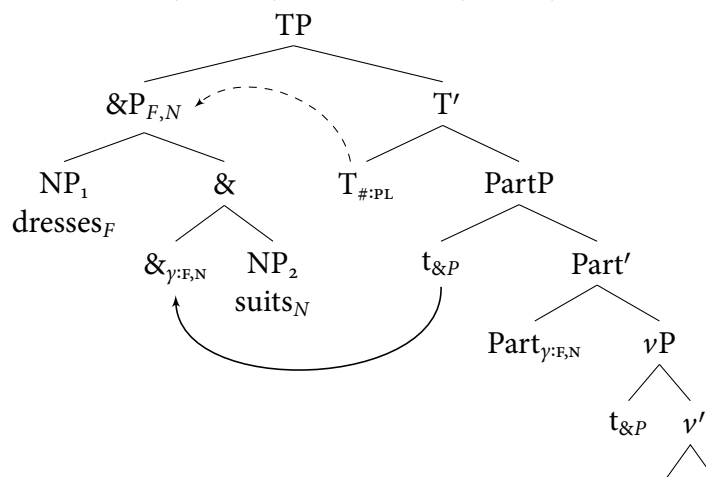
- Move will *feed*  $\uparrow\text{AGR}\uparrow$  and thereby avoid a crash:

(46) *PartP*: MOVE  $\gg$  (MERGE)  $\gg$   $\uparrow\text{AGR}\uparrow$   $\gg$  ( $\downarrow\text{AGR}\downarrow$ ):



- At TP, the order is the same, MOVE again feeds  $\uparrow\text{AGR}\uparrow$ , resulting in preverbal RA:

(47) *TP*: MOVE  $\gg$  (MERGE)  $\gg$   $\uparrow\text{AGR}\uparrow$   $\gg$  ( $\downarrow\text{AGR}\downarrow$ ):



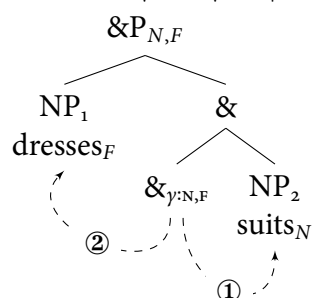
Application of MOVE is thus obligatory with this order of operations since it has to feed  $\uparrow\text{AGR}\uparrow$  (that applies early).

### 3.2.2 Postverbal Resolved Agreement

*Operations at the &P level:*

As above, MERGE feeds both Agree operations, however, both Agree operations apply in different orders. This does not have an effect at the &P level.

(48) MERGE  $\gg$   $\downarrow\text{AGR}\downarrow$   $\gg$   $\uparrow\text{AGR}\uparrow$ :



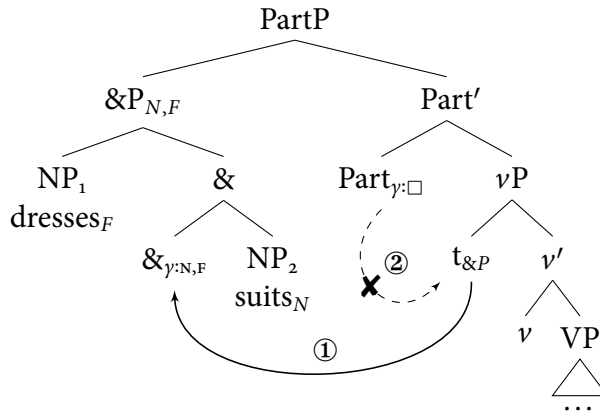
Operations at the PartP and TP level:

There are again two possibilities with respect to MOVE:

1. If MOVE applies:

- On the participle level, application of MOVE bleeds  $\downarrow\text{AGR}\downarrow$ .
- The derivation crashes due to failed Agree.

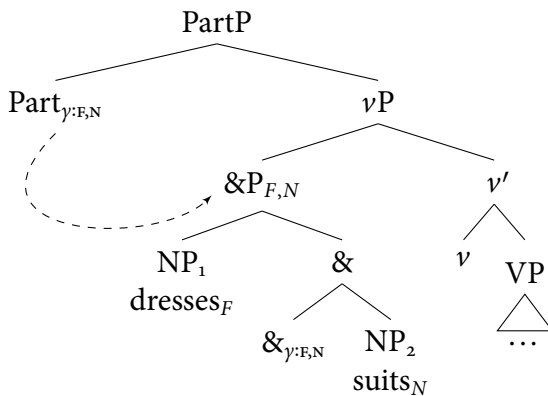
(49) PartP: MOVE  $\gg$  (MERGE)  $\gg$   $\downarrow\text{AGR}\downarrow$   $\gg$  ( $\uparrow\text{AGR}\uparrow$ ):



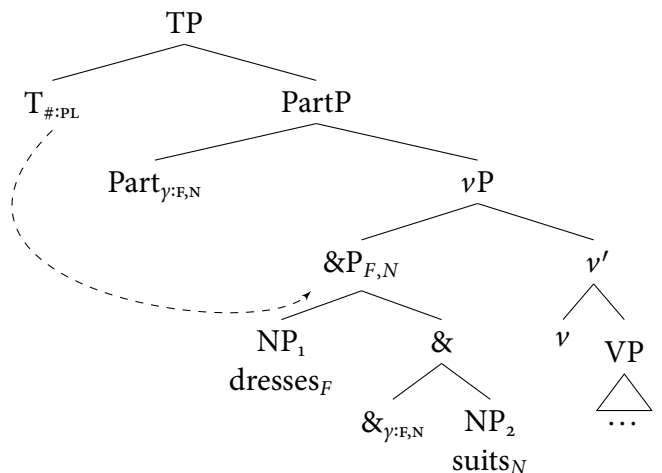
2. If MOVE does not apply:

- The conjunct phrase remains postverbal.
- The participle agrees with &P via  $\downarrow\text{AGR}\downarrow$ .
- T also agrees with the postverbal &P via  $\downarrow\text{AGR}\downarrow$ .

(50) PartP: (MERGE)  $\gg$   $\downarrow\text{AGR}\downarrow$   $\gg$  ( $\uparrow\text{AGR}\uparrow$ ):



(51) TP: (MERGE)  $\gg$   $\downarrow\text{AGR}\downarrow$   $\gg$  ( $\uparrow\text{AGR}\uparrow$ ):



This order thus derives postverbal Resolved Agreement. With MOVE not applying, the necessary context for a successful  $\downarrow\text{AGR}\downarrow$  is provided, resulting in realising the subject in its base position.

3.2.3 Last Conjunct Agreement

Recall that LCA is only acceptable when the conjunct phrase is in preverbal position (52). It is entirely ungrammatical if the &P is postverbal (53).

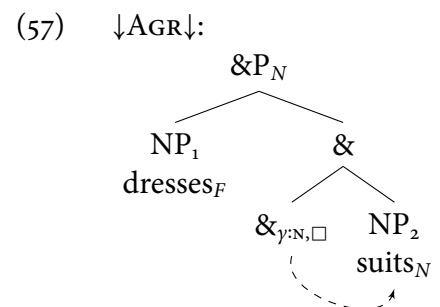
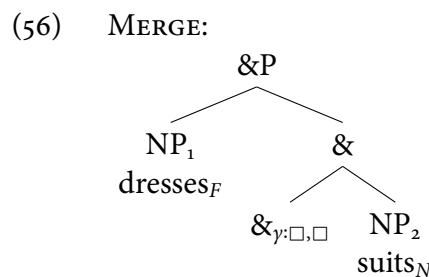
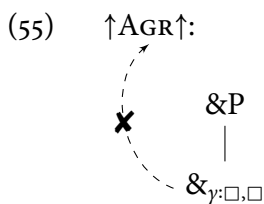
- (52) [<sub>&P</sub> Haljine i odela] su dugo stajala u ormaru.  
 dress.FPL and suit.NPL are long stand.PRT.NPL in wardrobe  
 ‘Dresses and suits were standing in the wardrobe for a long time.’
- (53) \*U ormaru su dugo stajala [<sub>&P</sub> haljine i odela].  
 in wardrobe are long stand.PRT.NPL dress.FPL and suit.NPL  
 ‘Dresses and suits were standing in the wardrobe for a long time.’

We need the &P to inherit only the features of the second conjunct (counterfeeding of  $\uparrow\text{AGR}\uparrow$ ). The order of operations that applies in this case is:

- (54) (MOVE)  $\gg$   $\uparrow\text{AGR}\uparrow$   $\gg$  MERGE  $\gg$   $\downarrow\text{AGR}\downarrow$

Operations at &P level:

1. MOVE does not apply at &P (no effect on outcome).
2.  $\uparrow\text{AGR}\uparrow$  applies, and since there is still no goal that this operation can target, it does not find a value.
3. MERGE applies and the &-head merges its two arguments (55).
4.  $\downarrow\text{AGR}\downarrow$  applies and the &-head receives the gender value of only the lowest conjunct (55).

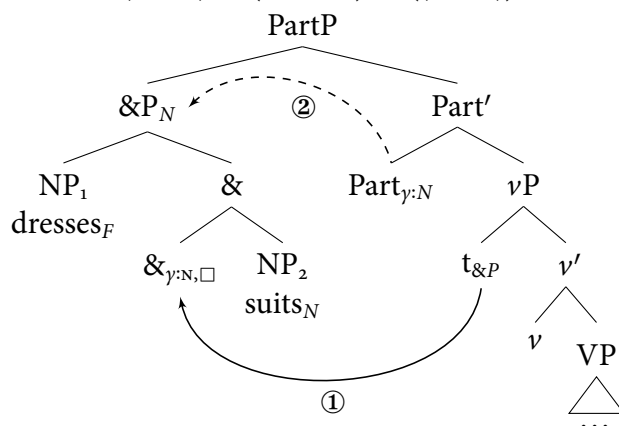


As a result, the &P node bears the features of only the second conjunct.

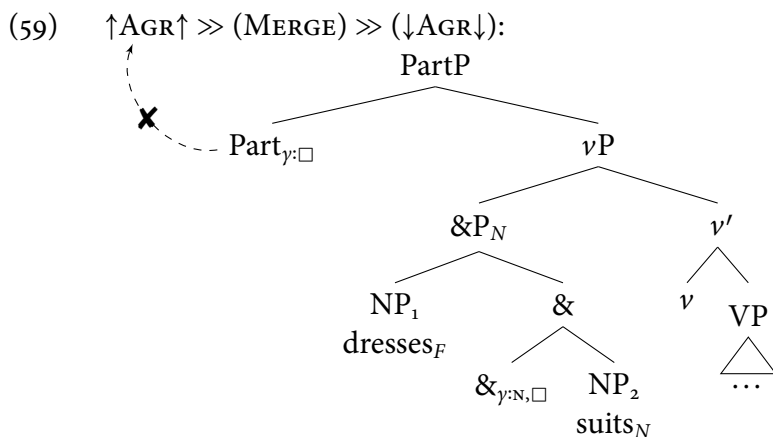
Operations at PartP:

1. If MOVE takes place, it will feed the next operation  $\uparrow\text{AGR}\uparrow$  and Agree will apply on both PartP and TP level:

- (58) MOVE  $\gg$   $\uparrow\text{AGR}\uparrow$   $\gg$  (MERGE)  $\gg$  ( $\downarrow\text{AGR}\downarrow$ ):

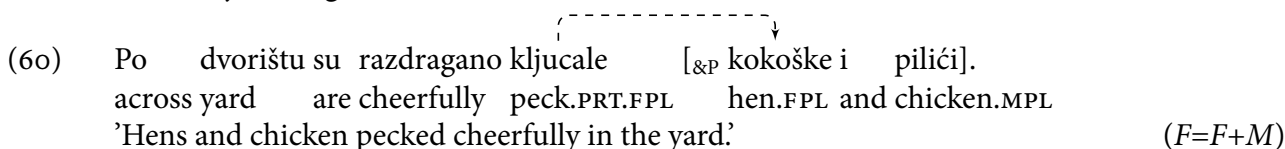


2. If MOVE does not apply, then  $\uparrow\text{AGR}\uparrow$  will probe upwards but not find a goal (resulting in a crash).

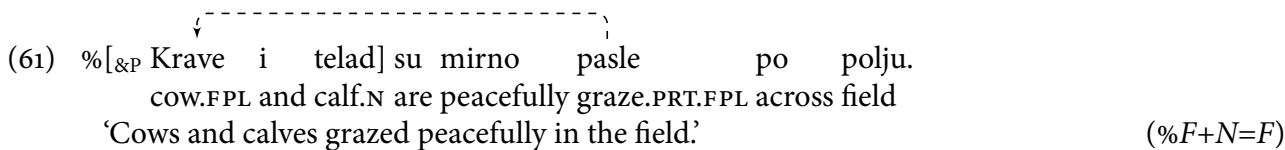


This means that MOVE *has* to apply with the order deriving LCA inside the &P (54), there is no optionality. This is what rules out agreement with the furthest conjunct.

### 3.2.4 First Conjunct Agreement



However, a number of speakers accept the following pattern of preverbal FCA (i.e. *Highest Conjunct Agreement*). In this case, the verb agrees with the highest conjunct, i.e. with the first conjunct in a preverbal &P (Marušič et al. 2015; Willer-Gold et al. 2015).

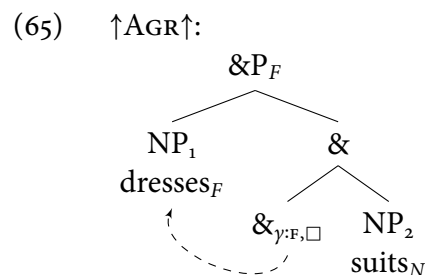
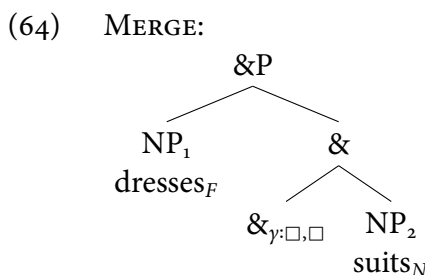
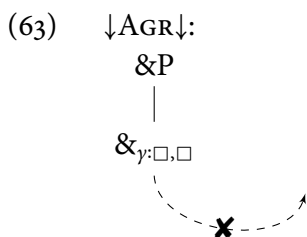


There are a number of possible orders that can derive FCA. The first order involves counterfeeding of  $\downarrow\text{AGR}\downarrow$  in (62). This order derives the fact that the &P inherits the features of only the higher NP, and that it needs to stay in the postverbal position.



Operations at &P level:

1. MOVE does not apply (no effect on outcome).
2.  $\downarrow\text{AGR}\downarrow$  applies vacuously, as it is counterfed by MERGE (63).
3. MERGE introduces the two NP arguments (63).



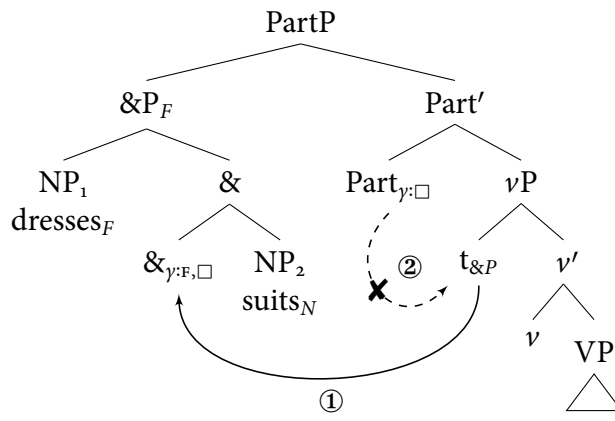
As a result, only the features of the higher NP are projected to the &P.

*Operations at the Participle and TP level:*

There are again two possibilities with respect to whether MOVE applies:

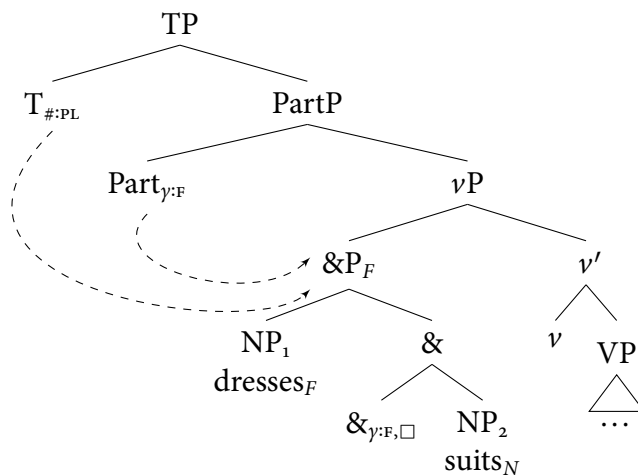
1. Applying MOVE before  $\downarrow\text{AGR}\downarrow$  results in bleeding of  $\downarrow\text{AGR}\downarrow$ .

(66) MOVE  $\gg$   $\downarrow\text{AGR}\downarrow$   $\gg$  (MERGE)  $\gg$  ( $\uparrow\text{AGR}\uparrow$ ):



2. MOVE does not apply, in which case the derivation will converge as  $\downarrow\text{AGR}\downarrow$  is not bled by MOVE.

(67)  $\downarrow\text{AGR}\downarrow$   $\gg$  (MERGE)  $\gg$  ( $\uparrow\text{AGR}\uparrow$ ):



MOVE is thus blocked with this order, forcing the &P to stay in postverbal position, and resulting in apparent agreement with the closest conjunct.

### 3.2.5 Counterfeeding of Agree – Two Additional Patterns of First Conjunct Agreement

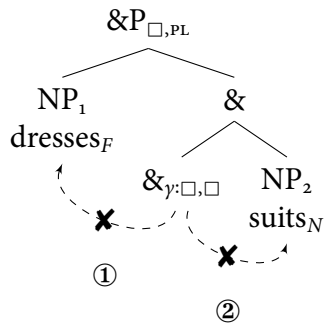
There are two possible orderings of operations in which both operations  $\uparrow\text{AGR}\uparrow$  and  $\downarrow\text{AGR}\downarrow$  are counterfed by MERGE. As a result, the &P will not receive a value and thus &P will remain underspecified for gender features. They both result in FCA, the first in postverbal FCA, and the second in preverbal FCA.

- (68) a. (MOVE)  $\gg$   $\downarrow\text{AGR}\downarrow$   $\gg$   $\uparrow\text{AGR}\uparrow$   $\gg$  MERGE  
 b. (MOVE)  $\gg$   $\uparrow\text{AGR}\uparrow$   $\gg$   $\downarrow\text{AGR}\downarrow$   $\gg$  MERGE

Operations at  $\&P$ :

Both Agree operations will be counterfeited since they both apply before MERGE.

(69) (MOVE)  $\gg$   $\downarrow$ AGR $\downarrow$   $\gg$   $\uparrow$ AGR $\uparrow$   $\gg$  MERGE:

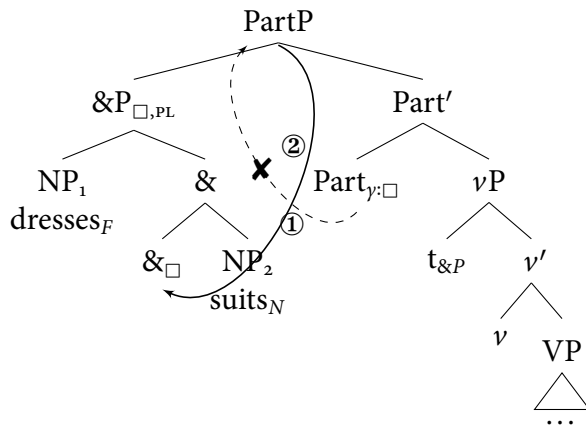


Operations at PartP:

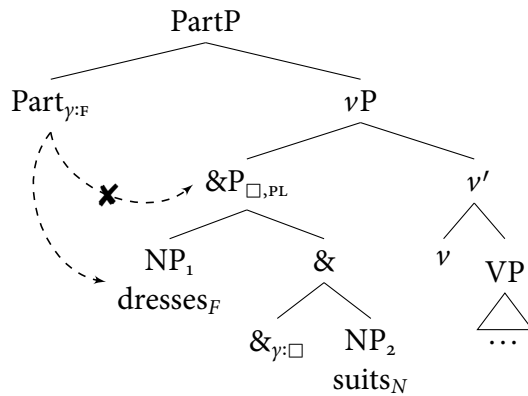
The order of operations in (68a) will again result in postverbal FCA.

1. If MOVE applies, it will bleed  $\downarrow$ AGR $\downarrow$ , as Part and T will not find a goal, leading to a crash.

(70) MOVE  $\gg$   $\downarrow$ AGR $\downarrow$   $\gg$   $\uparrow$ AGR $\uparrow$   $\gg$  MERGE:



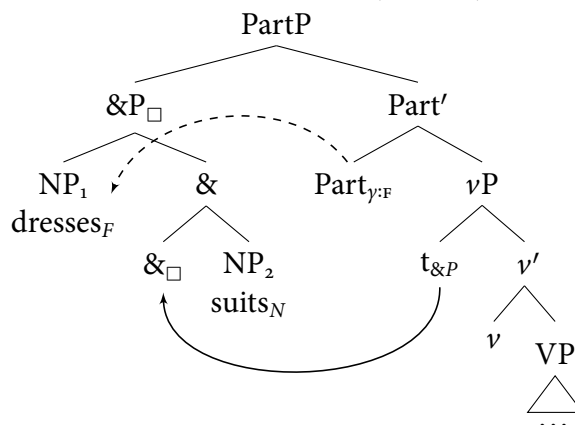
2. If MOVE does not apply, then the next operation  $\downarrow$ AGR $\downarrow$  finds the &P. The closest goal with gender features for Part is the structurally higher first conjunct in Spec-&P:

(71)  $\downarrow\text{AGR}\downarrow \gg (\uparrow\text{AGR}\uparrow) \gg (\text{MERGE})$ :

The other order of operations (68b) derives the pattern of preverbal FCA attested for some speakers:

(72) % $[\&P$  Haljine i odela] su dugo stajale u ormanu.  
 dress.FPL and suits.N.PL are long stand.PRT.FPL in wardrobe  
 ‘Dresses and suits stood in the wardrobe for a long time.’

1. If MOVE does not apply,  $\uparrow\text{AGR}\uparrow$  is counterfed, as Part will not find a goal.
2. MOVE thus has to apply. Since  $\&P$  is underspecified for gender, Part has to look inside the  $\&P$  (via m-command) and target the structurally higher NP.

(73)  $\text{MOVE} \gg \uparrow\text{AGR}\uparrow \gg \downarrow\text{AGR}\downarrow \gg (\text{MERGE})$ :

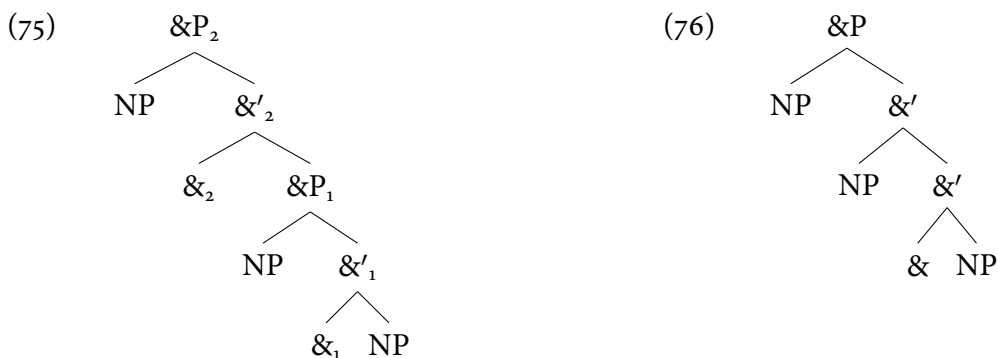
### 3.3 Medial conjunct agreement

Recall that agreement with a medial conjunct is not possible:

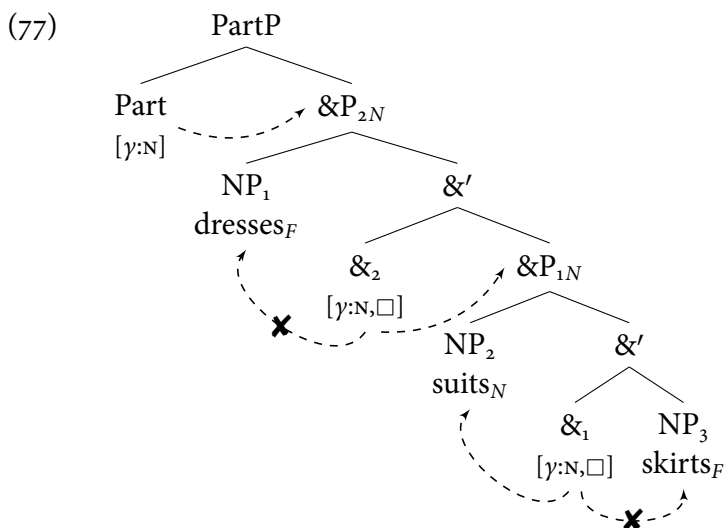
(74) \*Juče su prodata [ $\&P$  haljine, odela i suknje].  
 yesterday are sell.PRT.NPL dress.FPL suit.NPL and skirt.FPL  
 ‘Dresses, suits and skirts were sold yesterday.’

There are a number of possible structures for multiple coordinations, we assume (75):





Agreement with only the middle conjunct in gender requires the following derivation:



Note that this derivation requires different orders of operations on & and is therefore impossible to derive in this system:

- (78) &P<sub>1</sub>: ↓AGR↓ >> MERGE >> ↑AGR↑  
 &P<sub>2</sub>: ↑AGR↑ >> MERGE >> ↓AGR↓

Alternative: With the structure in (76), ↑AGR↑ could never target an intermediate specifier, since the outer specifier would be a closer (m-commanded) goal.

#### 4 Extensions: other conjunct agreement phenomena

##### 4.1 Sandwiched agreement

Slovenian has a phenomenon of *sandwiched agreement* which may seem problematic under the present approach (Marušič et al. 2015):

- (79) Sandwiched Agreement:  
 Aux [<sub>&P</sub> NP<sub>1</sub> & NP<sub>2</sub>] Part
- ```

    graph TD
      A["Aux [&P NP1 & NP2] Part"]
      B["NP1"]
      C["NP2"]
      A -.-> B
      A -.-> C
  
```

- (80) Včeraj so bile [<sub>&P</sub> krave in teleta] prodana.  
 yesterday be.PST.3.PL be.PRT.FPL COW.FPL and calf.NPL sold.NPL  
 ‘Yesterday cows and calves were sold.’

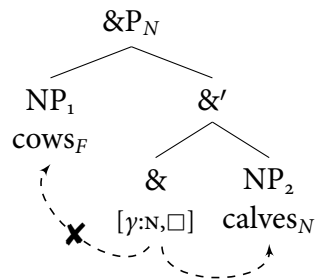
(Slovenian, Marušič et al. 2015:51)

In the current system, CCA is normally agreement with an entire &P which has partially inherited the features of its conjuncts. How can we have different values?

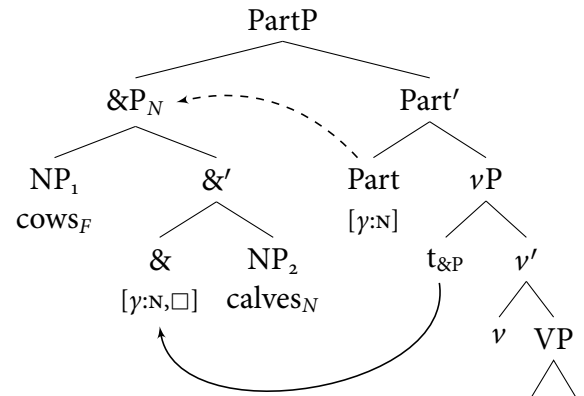
One solution is to adopt some notion of ‘deactivation’, that is, goals of a previous Agree operation can be deactivated as goals for further cycles of Agree (Bošković 2009).

Early application of  $\uparrow\text{AGR}\uparrow$  results in an LCA derivation.

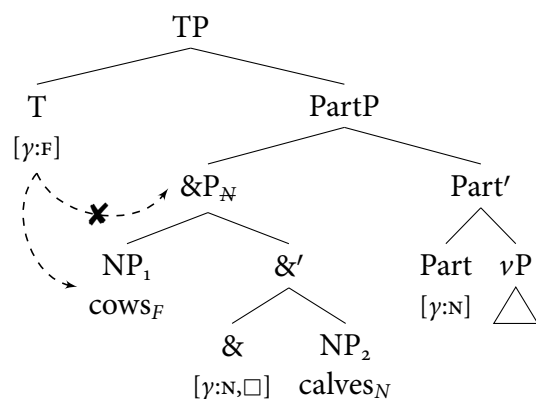
(81) (MOVE)  $\gg$   $\uparrow\text{AGR}\uparrow$   $\gg$  MERGE  $\gg$   $\downarrow\text{AGR}\downarrow$ :



(82) MOVE  $\gg$   $\uparrow\text{AGR}\uparrow$   $\gg$  MERGE  $\gg$   $\downarrow\text{AGR}\downarrow$ :



(83)



*Note:* This is not quite as straightforward since we require downward agree (and no movement). In order to not change the order of operations, we could assume head movement of the auxiliary to get the ‘sandwiched’ configuration.

#### 4.2 Singular agreement with FCA

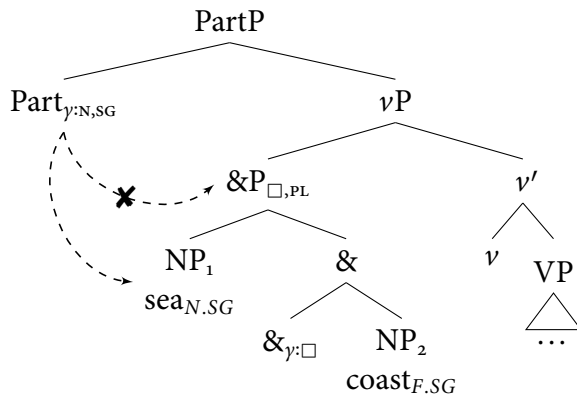
So far, number agreement has been consistently plural (due to the inherent plural value of &P). However, there are some examples of postverbal FCA, in which singular agreement has been reported to be possible (see Arsenijević & Mitić to appear):

(84) ?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.’

(Nsg=Nsg+Fsg)

Recall that there is an order of operations that derives postverbal FCA, where it is assumed that the participle targets the first conjunct for gender.

(85)  $\downarrow\text{AGR}\downarrow \gg (\uparrow\text{AGR}\uparrow) \gg (\text{MERGE})$ :



Thus, when the Part head probes, it must prefer to pick up number from the NP, rather than &P. This can be derived by a principle such as the following:

(86) *Multitasking* (van Urk & Richards 2015; Richards 2016):  
 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.

### 4.3 CCA and Left-Branch Extraction

As Bošković (2009) noted, Serbo-Croatian allows for the first conjunct to be extracted in violation of the Coordinate Structure Constraint (Ross 1967).

(87) Knjige<sub>i</sub> je Marko [<sub>&P</sub> t<sub>i</sub> i filmove] kupio.  
 books.FPL is Marko and films.MPL bought.MPL  
 ‘Marko bought books and films.’ (Bošković 2009:472)

This seems to be a more general case of Left-Branch Extraction (88) (a nice argument for &P!):

(88) Čijeg<sub>i</sub> si vidio [<sub>NP</sub> t<sub>i</sub> oca]?  
 whose are seen father  
 ‘Whose father did you see?’ (Bošković 2005:11)

Arsenijević et al. (2015) found the following patterns of CCA in these cases:

(89) Haljine<sub>i</sub> su davno [<sub>&P</sub> t<sub>i</sub> i odela] izašle / izašla /  
 dress.FPL are before.long and suits.N.PL get.out.PRT.FPL / get.out.PRT.NPL /  
 izašli iz mode.  
 get.out.PRT.MPL from fashion  
 ‘Dresses and suits got out of fashion long time ago.’

LCA is problematic for Bošković (2009), but all these patterns can be derived by the present account (and Marušić et al. 2015).

## 5 Summary

- A syntactic theory of conjunct agreement that does not make reference to linear order.
- Derive Medial Conjunct Agreement and Highest Conjunct Agreement (problematic for Bošković 2009).
- A unified theory of RA and CCA (both involve agreement with &P).

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