

## Person and Number Agreement with Exclusive Disjunction in German

**Intro:** Agreement patterns with coordinating DPs have played an important role in formulating agreement theories regarding feature resolutions and interaction (Bošković 2009; Marušič & Nevins 2010; Marušič et al. 2015; Willer-Gold et al. 2016; Murphy & Puškar 2018; Arsenijević et al. 2019 among many others). However, the proposals are usually solely based on conjunction agreement data, lacking support from other constructions and leaving many issues open, e.g. the role semantics plays in feature resolution. In this paper, we extend the scope of investigation to agreement with disjointed subjects in German using three elicitation surveys. We observe closest conjunct agreement (CCA), resolved agreement (RES) and a third option combining RES and CCA in a particular way. These empirical findings inform both structural analyses of disjunction and possible interactions between person and number features.

**Background on German agreement resolution:** The copular verb in German shows person and number agreement in Table 1. The 1st person plural and 3rd person plural forms are syncretic. Under conjunction, number features are resolved to plural while person resolution largely follows a person hierarchy (1>2>3) where conjunction of 1st person and 2nd/3rd person will be resolved to 1st person plural. However, conjunction of a 2nd person and a 3rd person can control either 2nd person or 3rd person plural agreement. The resolution rules are summarized in Table 2 and illustrated in (1). See Driemel (2018) for an analysis of the resolution rules. CCA is ruled out under conjunction, indicating clausal ellipsis is not a viable analysis.

1SG	1PL	2SG	2PL	3SG	3PL
bin	sind	bist	seid	ist	sind

Table 1: German copular verb

	1SG and 2SG	1SG and 3SG	2SG and 3SG
<b>RES</b>	sind	sind	seid/sind

Table 2: Resolution under conjunction

- (1) a. Ich und du sind eingeladen.  
I and you be.1PL invited.  
'You and I are invited.'

- b. Ich und die Frau sind eingeladen.  
c. Du und die Frau sind/seid eingeladen.  
'You/I and the woman are invited.'

**RES and CCA in exclusive disjunction agreement:** Disjointed subjects are reported to control RES or CCA (Morgan 1972; Haskell & MacDonald 2005). The status of RES is unclear as it is claimed to be facilitated by semantic interpretations such as inclusive disjunction and negation (Smith et al. 2018). We conducted elicitation surveys where participants were asked to provide all the acceptable forms of the copular verb to fill in the blank in (2). Exclusive disjunction *entweder...oder..* is used to rule out potential semantic plural agreement. Any RES under disjunction thus results from genuine feature resolution instead of semantics.

- (2) Entweder subject<sub>1</sub> oder subject<sub>2</sub> \_\_\_\_\_ eingeladen.  
Either subject<sub>1</sub> or subject<sub>2</sub> \_\_\_\_\_ invited 'Either subject<sub>1</sub> or subject<sub>2</sub> is invited.'

Survey 1 includes disjointed subjects with *matching person and number* as well as subjects with *matching person and mismatching number*. Table 3 summarizes responses from 6 native speakers. The RES row shows the predicted forms from the resolution rules in Table 2 and the CCA row shows the predicted forms from CCA. The \*numbers indicate how many occurrences each form received. Forms with fewer than 2 occurrences are excluded. We can see that predicted forms from both RES and CCA are attested in disjunction agreement and no other forms are attested.

	2SG 2SG	3SG 3SG	1PL 1PL	2PL 2PL	3PL 3PL	1SG 1PL	1PL 1SG	2SG 2PL	2PL 2SG	3SG 3PL	3PL 3SG
<b>RES</b>	bist	sind	sind	seid	sind	sind	sind	seid	seid	sind	sind
<b>CCA</b>	seid	ist	sind	seid	sind	sind	bin	seid	bist	sind	ist
Result	bist*7	sind*5	sind*6	seid*6	sind*6	sind*6	sind*4	seid*6	seid*4	sind*6	sind*5
	seid*3	ist*2					bin*2		bist*2		ist*2

Table 3: Survey 1 – matching person and number + matching person, mismatching number

Survey 2 includes disjointed subjects with *matching number and mismatching person* as well as *mismatching number and person*. Responses from 12 participants are shown in Table 4. Similar to Table 3, both RES and CCA are attested.

The results from both surveys show that **1.** genuine feature resolution is available under exclusive disjunction just like under conjunction in German; **2.** both the CCA patterns observed could not have resulted

from agreement attraction since singular DPs control CCA here, but do not trigger agreement attraction in general (Keung & Staub 2018); **3.** CCA could result from clausal ellipsis (*Entweder ich bin eingeladen oder du bist eingeladen*) or genuine agreement with the closest conjunct.

	1SG 2SG	2SG 1SG	1SG 3SG	3SG 1SG	2SG 3SG	3SG 2SG	1PL 2PL	2PL 1PL	1PL 3PL	3PL 1PL	2PL 3PL	3PL 2PL
<b>RES</b>	sind	sind	sind	sind	sind/seid	sind/seid	sind	sind	sind	sind	sind/seid	sind/seid
<b>CCA</b>	bist	bin	ist	bin	ist	bist	seid	sind	sind	sind	sind	seid
	sind*10	sind*8	sind*9	sind*9	ist*6	bist*6	seid*11	sind*12	sind*12	sind*12	seid*7	seid*12
	bist*6	bin*4	ist*6	bin*4	sind*6	seid*4	sind*4				sind*7	
		bist*1		ist*1	seid*2	sind*4						
	<b>1SG 2PL</b>	<b>2PL 1SG</b>	<b>1SG 3PL</b>	<b>3PL 1SG</b>	<b>2SG 1PL</b>	<b>1PL 2SG</b>	<b>2SG 3PL</b>	<b>3PL 2SG</b>	<b>3SG 1PL</b>	<b>1PL 3SG</b>	<b>3SG 2PL</b>	<b>2PL 3SG</b>
<b>RES</b>	sind	sind	sind	sind	sind	sind	sind/seid	sind/seid	sind	sind	sind/seid	sind/seid
<b>CCA</b>	seid	bin	sind	bin	sind	bist	sind	bist	sind	ist	seid	ist
	seid*11	sind*6	sind*12	sind*12	sind*11	sind*8	sind*10	sind*6	sind*12	sind*8	seid*12	seid*7
	sind*4	bin*4		bin*2	N/A*1	bist*7	seid*1	seid*5		ist*7	sind*1	ist*6
		seid*3						bist*4				sind*3

Table 4: Survey 2 – matching number, mismatching person + mismatching number and person

**Beyond RES and CCA:** As is highlighted in yellow in Table 4, when the first subject is 2PL and the second subject is 1SG, the 2PL form of the copula *seid* can be used, illustrated in (3a). The existence of this option is further verified by Survey 3 with 14 native German speakers (19.23% out of 24 speakers). This third option cannot be accounted for by either RES or CCA. At first glance, this pattern looks like first conjunct agreement (FCA). However, FCA would incorrectly predict unattested patterns across the board. For example, when the second subject is 1PL, *seid* is not available in (3b). The contrast in (3) is verified in a follow up acceptability judgment survey conducted with 8 speakers and renders the FCA analysis untenable. This pattern is also unexpected if number is resolved to PL and person undergoes CCA or under an ellipsis analysis.

- (3) a. Entweder ihr oder ich seid eingeladen.  
 Either 2PL or 1SG be.2PL invited
- b. \*Entweder ihr oder wir seid eingeladen.  
 Either 2PL or 1PL be.2PL invited  
 ‘Either you or I/we are invited.’

I propose that a generalized version of the Consistency Principle originally put forward for gender agreement in Slovenian can account for the pattern in (3). Marušič et al. (2015) propose the Consistency Principle in (4) to account for the Slovenian conjunction agreement pattern in (5). Slovenian conjunction allows both resolved agreement and agreeing with one individual conjunct. In (5), the number gets resolved as PL on the verb but mismatching genders cannot be resolved. Consequently, the verb probes one of the conjuncts for gender. According to (4), only the conjunct that matches with the verb in number (i.e. medals.FPL) can be selected to control gender agreement.

- (4) Consistency Principle in Slovenian: agreement with one conjunct in gender is allowed only when the value registered by the targeted conjunct matches the number value already on the verb.
- (5) Medalje in priznanje so mu pomenile vse.  
 medals.FPL and recognition.NSG AUX.PL him mean.FPL everything  
 ‘Medals and recognition mean everything to him.’

I propose that the generalized Consistency Principle in (6) can additionally account for the German pattern under disjunction in (3a). There, number first gets resolved as PL. Only the conjunct that matches with the verb in number can be selected to control person agreement, hence the 2PL marking on the verb.

- (6) Generalized Consistency Principle: agreement with one conjunct in person or gender is allowed only when the number value registered by the targeted conjunct matches the number on the verb.

The generalized principle indicates that **1.** number feature is probed before both gender and person; **2.** conjunction and disjunction agreement are constrained by similar principles; **3.** disjunction agreement is an operation in the grammar proper constrained by grammatical principles like (6) (contra. Haskell & MacDonald 2005 among others). We will also discuss why this principle is observed in German disjunction and Slovenian conjunction, but not German conjunction.