What we can learn from agreement with exclusive disjunction

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Why?

- We have been dealing with phi features for a long time in language sciences, e.g. [sg], [dl], [pl]; [masc], [fem], [neut]; [1st], [2nd], [3rd].
- I'm interested in how they interact.
- One way to look at how they interact is to smash them into each other, i.e. by looking at constructions where two or more features need to fit in one slot:

(1) Multi-valuation:

a. John's and Mary's students/*student are a couple.
b. John's tall and Mary's short student/*students are a couple.
c. John is glad that **Mary**, and/or, Bill is proud that **Sue** have/has been to China.

(2) Conjunction agreement

a. A book and two notebooks are on the table.
b. There is a book and two notebooks on the table.
c. Benmamoun, Elabbas et al., since 1994; Lorimor, Heidi. 2007; Bhatia, Archna. 2011.

(3) Disjunction agreement

a. Two books or a notebook was/were left on the bus.
b. You or I *am/are going to win.
c. Morgan, Jerry. 1972a,b, 1984, 1985, 2005; Garley, Matt. 2008.
d. Agreement attraction: Bock, Kathryn et al since 1991.

Gender in Slovenian disjunction with Lanko Marušič)

Why Slovenian?

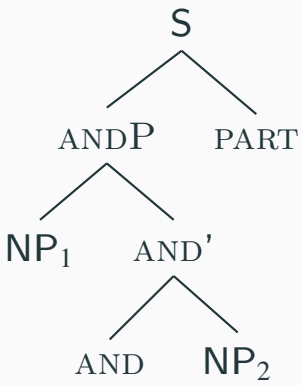
- Gender agreement with conjunction in Slovenian has been investigated (probably) the most among languages.
- Base on conjunction, a handful of intricate proposals have been made regarding feature specification of coordinators, feature resolution.
- Not nearly as much work on disjunction has been done.
- Direct comparison of disjunction and conjunction agreement can shed new light on these issues.

Background on gender agreement in Slovenian

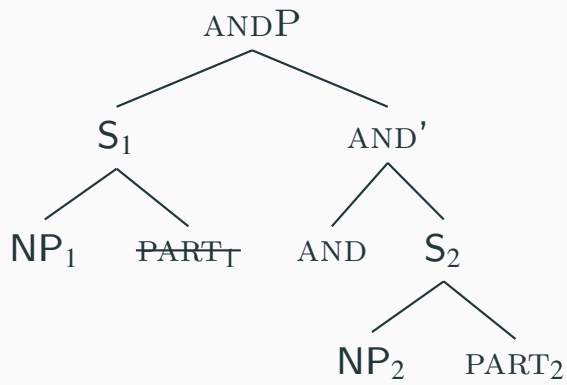
- Slovenian: Masculine (M), Feminine (F), Neuter (N).
- Gender agreement on participles.
- Marušič et al. (2015) with the elicitation task: When both conjunct NPs are plural, the participle can agree with the highest conjunct (HCA), linearly closest conjunct (CCA), or get resolved to M (RES).

(4) Knjige in peresa so se podražil-i/-e/-a.
books.F.PL and pens.N.PL AUX.PL REFL become.more.expensive-M.PL/-F.PL/-N.PL
'Books and pens have become more expensive.'

(5) [NP_1 and NP_2]



(6) Conjunction reduction



(7) [Knjige ~~so~~ ~~se~~ ~~podražil-e~~] in [peresa so se [book.F.PL ~~AUX.PL~~ ~~REFL~~ ~~become.more.expensive-F.PL~~] and [pens.N.PL AUX.PL REFL podražil-a].
become.more.expensive-N.PL]

- Arsenijević et al. (2019) with a picture matching task: ellipsis cannot explain all the CCA data under conjunction.

Background on gender agreement with conjunction in Slovenian and BCS

(8) Knjige in peresa so se podražil-i/-e/-a.
books.F.PL and pens.N.PL AUX.PL REFL become.more.expensive-M.PL/-F.PL/-N.PL
'Books and pens have become more expensive.'

Marušič et al. (2015)

- gender features of conjuncts cannot be calculated on ANDP: [_ N AND F]
- Option 1: insert a default M value on AND: [$_{\underline{M}}$ N AND F]
- Option 2: probe into the ANDP and matching with either the highest or the linearly closest conjunct, i.e. partial agreement: [**N** AND **F**]

Willer-Gold et al. (2016)

- use elicitation tasks to test gender agreement with conjunction in BCS (5 locations) and Slovenian (1 location);
- Option 1 + 2
- Option 3: resolution rules: [_ N AND F]

(9) a. MANDF = M; FANDM = M
b. MANDN = N; NANDM = N
c. FANDN = N; NANDF = N [$_{\underline{N}}$ N AND F]

Bošković (2009) and Murphy & Puškar (2018) are left out of the discussion, given that they did not report experimental results.

Background on gender agreement with disjunction in Slovenian and BCS

What's done:

- Arsenijević & Mitić (2016) use experiments to test disjunction and conjunction agreement in BCS; but did not separate the two in the reported data.
- Harrison (2009) reports a series of experiments on Slovenian agreement including a direct comparison between gender agreement in conjunction and disjunction (her Experiment 9);
  1. only included F and M, rendering only 2 unambiguous cases as oppose to 12 if combinations of all three genders are included;
  2. the conjuncts are singular rather than plural, allowing potential interference from number agreement;
  3. used simple disjunction *ali* which allows the inclusive reading.

What's not:

- exclusive disjunction;
- no interference from number.

Experiment

- Method: elicitation
  - The participant see a model sentence on the screen (10a), with a masculine singular noun phrase as the subject. Then they see a new replacement noun phrase at the bottom of screen (10b).

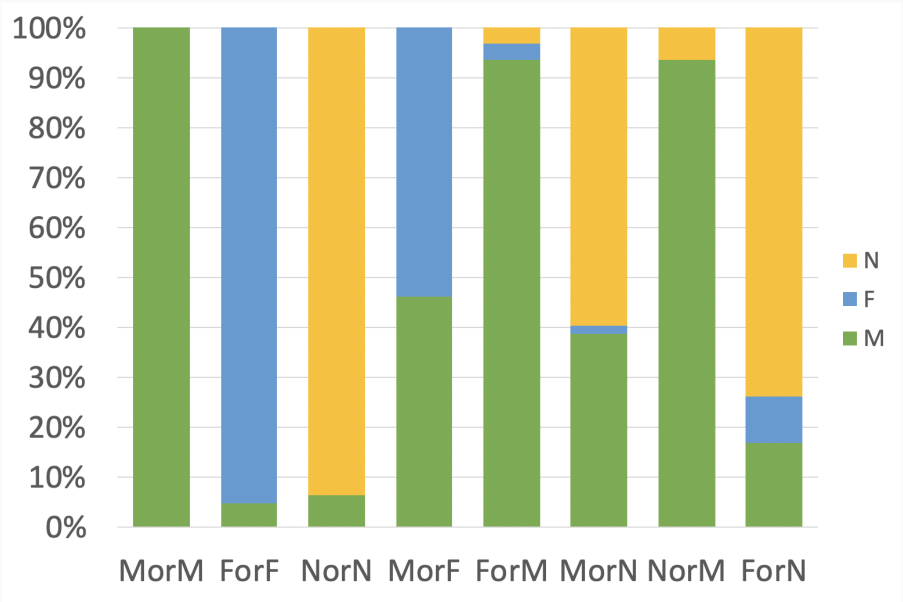
    (10) a. Oreh bo posajen za hišo.
    walnut AUX planted.M.SG behind house
    'Walnut will be planted behind the house.'
    b. ali grmi ali pa večje rože
    or shrub.M.PL or PA bigger flowers.F.PL
    'either shrubs or large flowers'

  - Their task is to produce an utterance in which they replace the subject of the model sentence with the new noun phrase.
- Materials
  - Exclusive disjunction construction *ali...ali pa...* 'either...or...' is used for the disjoined subjects.
  - 8 conditions: MorM, ForF, NorN, MorF, ForM, MorN, NorM, ForN. NorF was not included in the experiment due to a coding error.
  - 40 test items (5 x 8 conditions) + 45 filler items + 6 practice items = 91
  - All subjects are in PL. All subjects precede the verbs in all trials (SV order only).

Results

- 13 native speakers participated and all of them scored above 89% on the filler items.
- T-distribution comparing these results with 0 (one-tailed). **Bolded** results are all statistically different from 0 (in yellow), while the not-bolded results aren't (in gray).

	M	F	N
MorM	**62 (100%)**	0 (0%)	0 (0%)
ForF	3 (5%)	**60 (95%)**	0 (0%)
NorN	4 (6%)	0 (0%)	**58 (94%)**
MorN	**24 (39%)**	1 (2%)	**37 (60%)**
NorM	**59 (94%)**	0 (0%)	4 (6%)
MorF	**29 (46%)**	**34 (54%)**	0 (0%)
ForM	**59 (94%)**	2 (3%)	2 (3%)
ForN	**11 (17%)**	**6 (9%)**	**48 (74%)**



Discussion: CCA

CCA is a stable agreement option in all conditions.

- unambiguous cases: F in MorF = 54%, N in MorN = 60%, N in ForN= 74%
- CCA can potentially result from a clausal ellipsis analysis (11a) and/or a conjoined subject analysis (11b).

(11) a. [either shrubs$_{\text{M}}$ ~~will be planted$_{\text{M}}$ behind the house~~] or [large flowers$_{\text{F}}$ will be planted$_{\text{F}}$ behind the house].
b. [either shrubs$_{\text{M}}$ or large flowers$_{\text{F}}$] will be planted$_{\text{F}}$ behind the house.

- Compared with conjunction, CCA takes a larger portion of the responses under disjunction:

	Marusic et al 2015	Willer-Gold et al 2016	Disjunction
F in MF	22%	35%	54% ↑
N in MN	31%	40%	60% ↑
N in FN	54%	68%	74% ↑

- Given (11), the increase can result from

❶ the fact that clausal coordination with ellipsis is more frequent with disjunction (11a);
❷ or that CCA is chosen more when agreeing with the disjoined subjects (11b);
❸ or both.

Discussion: HCA

HCA are observed to a much lesser extent:

- Unambiguous cases: N in NorM = 6%, F in ForM = 3%, F in ForN = **9%**.
- Among them, only F in ForN is significantly different from 0.
- HCA is also the weakest option under conjunction, especially in conditions including M.
- Comparing with FandN, the low ratio of HCA under disjunction correlates with the increased preference for CCA:

F+N	Marusic et al 2015	Willer-Gold et al 2016	disjunction
CCA	52%	68%	74% ↑
HCA	22%	12%	9% ↓
RES	20%	18%	17%

- It is possible that HCA is a viable option. Acceptability judgments would be helpful.

Discussion: Default and RES

The label *resolved agreement* (RES) has been used to refer to different types of agreement.

- Both Marušič et al. (2015) and Willer-Gold et al. (2016): insert the default M on the AND head, labeled as Default agreement (DEF).
- This is motivated by the significant presence of M in NANDN, FANDF, and FANDN.

  (12) M in FANDF = 15%; M in NANDN = 12%; M in FANDN = 36%. (Willer-Gold et al. 2016)

- Disjunction is different: M in FORF and NORN are not significantly different from 0.

  (13) M in FORF = 5%; M in NORN = 6%, M in FORN = 17%

- It could be that unlike AND, no DEF for OR in Slovenian.
- But note that Willer-Gold et al. (2016) tested BCS in 5 locations and Slovenian in 1 location. If we only look at their Slovenian data:

  (14) M in FANDF = 4%; M in NANDN = 3%; M in FANDN = 18%.

- Combining (13) and (14), there is no evidence of the insertion of M to AND or OR as a default in Slovenian.
- Willer-Gold et al. (2016) acknowledge this difference between BCS and Slovenian. They propose that the default M is dispreferred in Slovenian.

Discussion: RES

- Note that M is significant in both FANDN and FORN.

  (15) M in FANDN = 18%; M in FORN = 17%

- If it's not the default insertion of M, what is the source of it?
- Willer-Gold et al. (2016) propose a set of resolution rules:

  (16) a. MANDF = M; FANDM = M
  b. MANDN = N; NANDM = N
  c. FANDN = N; NANDF = N

- We agree with Willer-Gold et al. (2016) that resolution rules are necessary, however, the disjunction data led us to a different set of resolution rules where mismatching values are all resolved to M:

  (17) a. MORF = M; FORM = M
  b. MORN = M; NORM = M
  c. FORN = M; NORF = M

- The significant presence of M in FORN amd FANDN is accounted for.
- Given the low percentage of HCA in general, the significant presence of M in MORF (46%) and MORN (39%) can also be accounted for.
- The existence of RES shows that clausal ellipsis cannot be the **only** structure for disjunction. Disjunction of NPs must be an option.
- It also shows that gender RES cannot be only for conjunction.

Discussion: RES cont.

(18) Willer-Gold et al. 2016, (10)

a. MANDF = M; FANDM = M
b. MANDN = N; NANDM = N
c. FANDN = N; NANDF = N
d. insertion of default M

(19) Current proposal

a. MORF = M; FORM = M
b. MORN = M; NORM = M
c. FORN = M; NORF = M
d. no insertion of default M

It is not ideal to have two distinct sets of feature resolution rules for two coordinators.

Argument against (18) and in favor of (19):

- (18) is motivated by "the lower rate of M overall" with postverbal subjects ((20b)) than preverbal subjects (20a) (Willer-Gold et al. 2016, p. 215)

(20) a. [NP_1 and NP_2] PART (M↑)
(M = DEF + RES)

b. PART [NP_1 and NP_2] (M↓)
(M = DEF only)

- They propose that the resolution is unavailable with postverbal subjects (20b), so M loses one source, hence the decrease.
- But

(21) a. [N_1 and F_2] PART (M↑)
(M = DEF only)

b. PART [N_1 and F_2] (M↓)
(M = DEF only)

- The decrease of M is unaccounted for by (18).
- Assuming that resolution is blocked in post-verbal subjects, (19) (applied to conjunction) can account for the decrease of M in all conditions.

Discussion: RES cont.

(18) Willer-Gold et al. 2016, (10)

a. MANDF = M; FANDM = M
b. MANDN = N; NANDM = N
c. FANDN = N; NANDF = N
d. insertion of default M

(19) Current proposal

a. MORF = M; FORM = M
b. MORN = M; NORM = M
c. FORN = M; NORF = M
d. no insertion of default M

Argument in favor of (18) and against (19):

- Willer-Gold et al. (2016) observe that N is more frequent than F when they are the first or the second conjunct.

	CCA		HCA	
N	45%	53%	8%	18%
F	25%	36%	3%	11%
N-F	20%	17%	5%	7%

- However, when only looking at Slovenian, the differences are reduced. Admittedly, N is always numerically higher than F.

	CCA		HCA	
N	40%	68%	6%	19%
F	35%	51%	2%	12%
N-F	5%	17%	4%	7%

- Taking stock:

	(18)	(19)
the lack of M in FF/NN	no	yes
decrease of M in postverbal subjects	no	yes
disjunction data	no	yes
the numerical difference between N and F	yes	no

Summary

Empirical findings:

- CCA is observed in disjunction across the board;
- HCA is only observed in one condition: F in FORN. The decrease correlates with the increased CCA.
- Focusing on the unambiguous cases of each agreement strategy: disjunction shows more CCA, less HCA and RES than conjunction.

Combining the experimental data and a closer look at the conjunction data, we propose:

1. No default insertion of M to the AND or OR head in Slovenian.
2. Feature mismatches are resolved to M, contra Willer-Gold et al. 2016.
3. Ellipsis cannot be the only structure of sentences with disjunctive subjects, given the existence of RES.
4. RES cannot be only for conjunction.

Person and number in German disjunction

Intro

- The Slovenian gender study looks at one feature (gender) in a language where the conjunction agreement patterns are complex (CCA/HCA/RES in Slovenian).
- The German study looks at two features (number and person) in a language where the conjunction agreement patterns are not complex (RES in Slovenian).

Feature resolution in German under conjunction

	SG	PL
1	bin	sind
2	bist	seid
3	ist	sind

Table 1: German copula paradigm

(20)
a. Ich und du sind eingeladen.
1SG and 2SG be.1/3PL invited
b. Ich und mein Freund sind eingeladen.
1SG and my friend be.1/3PL invited
c. Du und dein Freund seid/sind eingeladen.
2SG and your friend be.2PL/be.3PL invited

(21) Number resolution rules
a. [SG] and [SG] = [PL]
b. [PL] and [PL] = [PL]
c. [SG] and [PL] = [PL]
d. [PL] and [SG] = [PL]

(22) Person resolution rules
a. [1] and [2] = [1]
b. [1] and [3] = [1]
c. [2] and [3] = [2/3]
(see Driemel 2018 for an account)

What about exclusive disjunction?
Survey 1

(23) Entweder DP1 oder DP2 _____ eingelagen.
either DP1 or DP2 _____ invited
'Either DP1 or DP2 is invited.'

- Survey 1 includes disjoined subjects with *matching person and number* as well as subjects with *matching person and mismatching number*
- Task: list all the acceptable forms; 6 participants except for 2pl 2sg (n=7)
- Forms that are not predicted by RES or CCA are in red.

	1SG 1SG	2SG 2SG	3SG 3SG	1PL 1PL	2PL 2PL	3PL 3PL
RES	n/a	seid	sind	sind	seid	sind
CCA	n/a	bist	ist	sind	seid	sind
Results	n/a	bist*6	sind*5	sind*6	seid*6	sind*6
		seid*2	ist*4			
		sind*2				
	1SG 1PL	1PL 1SG	2SG 2PL	2PL 2SG (7)	3SG 3PL	3PL 3SG
RES	sind	sind	seid	seid	sind	sind
CCA	sind	bin	seid	bist	sind	ist
Results	sind*6	sind*4	seid*6	seid*7	sind*6	sind*5
		bin*2	sind*1	bist*4		ist*2
		ist*1	ist*1	sind*1		

- Predicted forms from both RES and CCA are attested in disjunction agreement. Almost nothing else is.

What about disjunction agreement?
Survey 2

- Survey 2 looks at subjects with *matching number and mismatching person* as well as *mismatching number and person*.
- same task, n = 12 (except for 3PL 2PL: n = 13)

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

Table 2: Number mismatch

- Again, both RES and CCA are attested.
- RES under disjunction works the same way as conjunction including (2+3 = 2/3)

What about disjunction agreement?
Survey 2 cont.

- Table 3 shows conditions with mismatching number and gender. n = 12

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

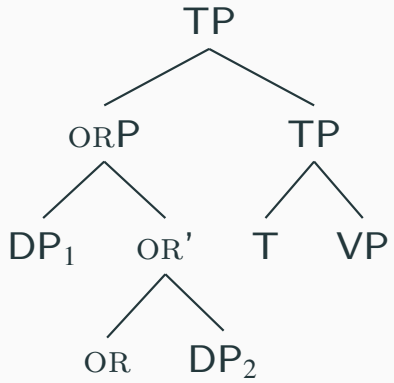
Table 3: Person and number mismatch

- RES and CCA would cover all the cells, except for one.

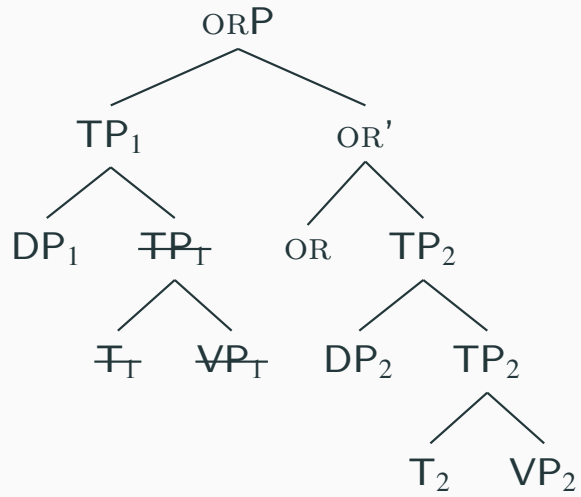
What we can learn from the results: structure(s)

- At least two possible structures have been proposed for conjunction: one where two DPs form an ANDP, and one involving conjunction reduction i.e. ellipsis. Same structures can be assumed for disjunction:

(24) [DP_1 or DP_2]



(25) Disjunction reduction



- It's been argued that (24) can generate both CCA and RES while (25) can only generate CCA.
- The existence of both RES and CCA argues that either both structures are possible, or at least (24) is possible, the jury is still out on (25).

What we can learn from the results: RES

Feature resolution is possible even under exclusive disjunction for all the feature combinations. Assertedness/interpretation cannot be the precondition for RES.

(26) a. Entweder ich oder du sind eingeladen.
either 1SG or 2SG be.1/3PL invited
'Either I or you are invited.' (sind * 10, n=12)

b. Entweder du oder ich sind eingeladen.
either 2SG or 1SG be.1/3PL invited
'Either you or I are invited.' (sind * 8, n=12)

(27) a. Entweder ich oder die Frau sind eingeladen.
either 1SG or the woman be.1/3PL invited
'Either I or the woman are invited.' (sind * 9, n=12)

b. Entweder die Frau oder ich sind eingeladen.
either the woman or 1SG be.1/3PL invited
'Either I or the woman are invited.' (sind * 9, n=12)

Both conjunction and disjunction observe the 2+3=2/3 rule.

(28) a. Entweder du oder die Frau sind/seid eingeladen.
either 2SG or the woman.3SG be.1/3PL/be.2PL invited
'Either you or the woman are invited.' (sind * 6, seid * 2, n=12)

b. Entweder die Frau oder du sind/seid eingeladen.
either the woman.3SG or 2SG be.1/3PL/be.2PL invited
'Either you or the woman are invited.' (sind * 4, seid * 4, n=12)

What we can learn from the results: CCA

CCA is also possible for all the feature combinations, even without feature mismatch.

(29) a. Entweder der Junge oder die Frau ist eingeladen.
either the boy or the woman be.3SG invited
'Either the boy or the woman is invited.' (ist * 4, n=6)

b. Entweder ich oder du bist eingeladen.
either 1SG or 2SG be.2SG invited
'Either I or you are invited.' (bist * 6, n=12)

It's possible that the CCA under disjunction results from ellipsis.

(30) Entweder ich ~~bin eingeladen~~ oder du bist eingeladen.

Ellipsis in general allows sloppy identity + morphological mismatch (SIMM) as in (31). (32) shows that disjunction with CCA doesn't allow SIMM,

(31) Frank hat sein bestes gegeben, und Mia ~~hat~~ auch ~~ihr~~ ~~Bestes~~
Frank$_1$ have.3SG his$_1$.MSG best do, and Mary$_2$ have.3SG also her$_2$.FSG best
~~gegeben~~.
do
'Frank has done his best, and Mary too.' (n=2)

(32) *Entweder Sally oder Frank hat sein bestes gegeben.
either Sally or Frank have.3SG his.MSG best do
'Either Sally or Frank did their best.' (n=2)

Ideally, we should show that **backward** ellipsis in German allows SIMM. But backward clausal ellipsis in German is hard to come by. So ellipsis is still possible for CCA with disjunction.

What we can learn from the results: RES+CCA

The strategies that number and person use must be the same in one sentence: either both RES or both CCA. Mismatch between strategies is not allowed:

(33) a. Entweder du oder die Frau bist eingeladen.
either 2SG or the woman.3SG be.2SG invited
person RES, number CCA (bist * 1)

b. Entweder ich oder du seid eingeladen.
either 1SG or 2SG be.[2PL] invited
number RES, person CCA (seid * 0)

This is compatible with the hypothesis that RES and CCA involve different structures, though that's not the only possible account.

A third option? Survey 3

Remember there were 3 participants who chose *seid*$_{\text{2PL}}$ for 2PL OR 1SG? I wanted to see if that's real.

14 participants from Vienna on 7 combinations.

n=14	1SG OR 2SG	2PL OR 1SG	2PL OR 1PL	1PL OR 2PL	2SG OR 3SG	3PL OR 2SG	2PL OR 3SG
RES	sind	sind	sind	sind	sind/seid	sind/seid	sind/seid
CCA	bist	bin	sind	seid	ist	bist	ist
Results	bist*11	bin*10	sind*14	seid*12	ist*9	sind*8	seid*10
	sind*9	sind*8		sind*6	seid*5	bist*7	ist*7
	bin*1	seid*2			sind*4	seid*5	sind*2
	ist*1				bist*1		

Table 4: Survey 3 (n=14)

The third option

- Table 5 combines Survey 2 and 3, bringing the n to 26.

n=26	1SG 2SG	2PL 1SG	2PL 1PL	1PL 2PL	2SG 3SG	3PL 2SG	2PL 3SG
RES	sind	sind	sind	sind	sind/seid	sind/seid	sind/seid
CCA	bist	bin	sind	seid	ist	bist	ist
Results	sind*19	bin*14	sind*24	seid*23	ist*15	sind*14	seid*17
	bist*17	sind*14	seid*1	sind*10	sind*10	bist*11	ist*13
	bin*1	seid*5	n/a*1		seid*7	seid*10	sind*5
	ist*1	n/a*1			bist*1		

Table 5: Survey 2 and 3, n=26

- The occurrences of *seid* in 2PL 1SG come to 5 out of 34 responses from 26 participants. That's 14.7% of the responses and 19.23% of the participants.
- Compare that to the frequency of other unpredicted forms in Table 5 ranging from 2.6% - 3.8% of the responses and 3.84% of the participants.
- If this is indeed a real option, what does it mean? (If you are not convinced, ignore the next four slides.)

The third option

(34) a. Entweder ihr oder ich sind$_{1\text{PL}}$ eingeladen. (RES)
b. Entweder ihr oder ich bin$_{1\text{SG}}$ eingeladen. (CCA)
c. Entweder ihr oder ich seid$_{2\text{PL}}$ eingeladen. (third option)
either 2PL or 1SG be.2PL invited
'Either you.pl or I are invited.'

- Ellipsis cannot generate (34c).
- Highest conjunct agreement can, but makes wrong predictions:

(35) a. Either 1SG or 2SG V$_{1\text{SG}}$*1 invited. (n=26)
b. Either 2PL or 1PL V$_{2\text{PL}}$*1 invited. (n=26)
c. Either 2SG or 3SG V$_{2\text{SG}}$*1 invited. (n=26)
d. Either 1SG or 2PL V$_{1\text{SG}}$*0 invited. (n=12)

- It seems to be agreement with the first conjunct in case that the first conjunct is PL and the second conjunct is SG.

The third option in Slovenian

A similar pattern is found in Slovenian conjunction agreement (Marušič et al. 2015).

- When both conjuncts are PL:
  - Slovenian allows HCA, CCA, and RES in gender.
- When both conjuncts are SG:
  - number is resolved to DL, gender is resolved to M,
  - no CCA/HCA allowed.
- When conjuncts mismatch in number: one SG one PL
  - Option 1: number resolved to PL, gender resolved to M;
  - **Option 2**: number resolved to PL, gender goes with the PL conjunct (FPL agreement with MSG+FPL, FPL+MSG, NSG+FPL, FPL+NSG);
  - **but not**: number resolved to PL, gender goes with the SG conjunct (no NPL agreement with FPL+NSG or NSG+FPL)
- Consistency Principle in Slovenian:
  Partial Agreement (CCA/FCA) in Gender is allowed only when the Agreement value registered by the targeted conjunct C_x matches the Number value already on the verb (acquired from BoolP).
  - $C1_{[\text{NUM:A,GEN:X}]}$ and $C2_{[\text{NUM:B,GEN:Y}]}$ $T_{[\text{NUM:A}\rightarrow\text{GEN:X}]}$
  - $C1_{[\text{NUM:A,GEN:X}]}$ and $C2_{[\text{NUM:B,GEN:Y}]}$ $T_{[\text{NUM:B}\rightarrow\text{GEN:Y}]}$

Slovenian conjunction: gender depends on number.

1. RES on number, and RES on gender;
2. **or**: RES on number, choose either the closest or the highest conjunct with that number value for gender; **but not**: CCA on number.

Back to the third option in German

(36) a. Entweder ihr oder ich sind$_{1\text{PL}}$ eingeladen. (RES)
b. Entweder ihr oder ich bin$_{1\text{SG}}$ eingeladen. (CCA)
c. Entweder ihr oder ich seid$_{2\text{PL}}$ eingeladen.
either 2PL or 1SG be.2PL invited
'Either you.pl or I are invited.'

German disjunction:

1. RES on number, and RES on person;
2. **or**: CCA on number, and CCA on person;
3. **or**: RES or CCA on number, and choose either the closest or the highest conjunct with that number value for person,
   - but only if there is a number mismatch: *2PL or 1PL V$_{2\text{PL}}$ (This is so ugly.)

Person in German can depend on number agreement, similar to gender agreement in Slovenian.

- Consistency Principle in German:
  Partial Agreement (CCA/HCA) in person is allowed when the Agreement value registered by the targeted conjunct C$_x$ matches the Number value already on the verb and the number values on the conjuncts differ.
  - C1$_{[\text{NUM:A,PER:X}]}$ and C2$_{[\text{NUM:B,PER:Y}]}$ T$_{[\text{NUM:A}\rightarrow\text{PER:X}]}$ (a $\neq$ b)
  - C1$_{[\text{NUM:A,PER:X}]}$ and C2$_{[\text{NUM:B,PER:Y}]}$ T$_{[\text{NUM:B}\rightarrow\text{PER:Y}]}$ (a $\neq$ b, subset of CCA)

Some notes

- Why only 2PL OR 1SG? In fact, all the combinations that can show the third option in German did:

(37)
- 1SG OR 1PL = 1PL (CCA)
- 1SG OR 2PL = 2PL (CCA)
- 1SG OR 3PL = 3PL (CCA)
- 2SG OR 2PL = 2PL (CCA)
- 2SG OR 1PL = 1PL (CCA)
- 2SG OR 3PL = 3PL (CCA)
- 3SG OR 1PL = 1PL (CCA)
- 3SG OR 2PL = 2PL (CCA)
- 3SG OR 3PL = 3PL (CCA)

(38)
- 1PL OR 1SG = 1PL (RES)
- 1PL OR 2SG = 1PL (RES)
- 1PL OR 3SG = 1PL (RES)
- 2PL OR 2SG = 2PL (RES)
- 2PL OR 1SG = 2PL (unambiguous)
- 2PL OR 3SG = 2PL (RES)
- 3PL OR 1SG = 3PL (syncretic)
- 3PL OR 2SG = 3PL (RES)
- 3PL OR 3SG = 3PL (RES)

Summary for German

What we know:

- Person and number agreement with exclusive disjunction in German allow resolved agreement following the same rule as the conjunction agreement.
- Disjunction agreement additionally allow CCA, unlike conjunction.
- Person agreement can depend on number agreement if the two conjuncts differ in number.
  - Number and person agreement can be separated (number $\gg$ person).
  - A similar pattern is observed in Slovenian (number $\gg$ gender).

What we don't know:

- Whether CCA results from ellipsis for sure (if ellipsis is allowed here, why not in conjunction?)
- Whether the third option is real (It's 5 speakers out of 26)
  - more participants, with more lexical variations.
  - other languages with less syncretism and more strict resolution rules. (Icelandic and Slovenian come to mind.)
  - acceptability judgment task.
- What makes the third option possible and how wide spread it is.

Taking German and Slovenian together

- Disjunction made CCA possible (number and person in German) or more frequent (gender in Slovenian).
- HCA not in German, same as conjunction; HCA not really in Slovenian, possibility due to the increased CCA, so it may still be compatible with conjunction.
- RES: yes, RES in disjunction behave the same as conjunction.

Questions:

- Can disjunction agreement be reduced to ellipsis?
  - RES says no. (as well as the German third option)
- Does RES (only) care about assertedness?
  - RES in German says not 'only'.

Bigger picture

- Why does disjunction make CCA possible/better?
- Is Disjunction agreement part of grammar or not? How would we tell?
- How did children learn this? Or did they learn this?

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Workshop on Agreement in Multivaluation Constructions
Frankfurt am Main, Germany.
November 19-20, 2020

Invited Speakers:
Barbara Citko (University of Washington)
Paula Fenger (University of Connecticut/Harvard University)
Caroline Heycock (University of Edinburgh)
Franc Marušič (University of Nova Gorica)
Alan Munn (Michigan State University)
Jana Willer-Gold (University College London)

Now accepting abstracts.
Deadline: May 15.

Thank you!

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