FIRST COMES FIRST OR PROXIMITY FOR ALL IN CROATIAN: GENDER AGREEMENT

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MOTIVATION AND BACKGROUND

• In a variety of languages (in Slavic language family Bosnian, Croatian, Serbian, Slovenian, in other languages - Hindi, Ndebele), **coordinated subjects** (and in some cases, objects) consisting of two (and more) NPs can trigger verbal agreement with only one of these noun phrases, rather than with the coordination as a whole.

• TERMINOLOGY:
  • non-coordinated/simple/non-conjoined subjects
  • coordinated/complex/conjoined subjects
  • full/resolved agreement vs. partial agreement (agreement with a single conjunct)
BASIC FACTS

• AGREEMENT – South Slavic languages

  • Verbs obligatorily agree with subjects (both pre- and post-verbally)

  • Finite verbs (aux and main verbs) agree in person & number – without exception

  • Participles agree in number & gender – without exception with number, variable with gender
PARTIAL AGREEMENT

• Dječak i pas su zaustavljeni.
  • boy.MASC.SG dog.MASC.SG AUX:PL stop.Part.MASC.PL

• Dječaci i psi su zaustavljeni.
  • boy.MASC.PL dog.MASC.PL AUX:PL stop.Part.MASC.PL

• Pjesma i melodija su otpjevane.
  • Song.FEM.SG melody.FEM.SG AUX.PL sing.Part.FEM.PL

• Pjesme i melodije su otpjevane.
  • song.FEM.PL melody.FEM.PL AUX.PL sing.Part.FEM.PL

• Pismo i pero su poslani.
  • letter.N.SG feather.N.sg AUX.PL send.Part.MASC.PL

• * Pismo i pero su poslana.
  • letter.N.SG feather.N.sg AUX.PL send.Part.N.PL

• Pisma i pera su poslana.
  • letter.N.SG feather.N.sg AUX.PL send.Part.N.PL
BASIC FACTS: PUZZLE

• What happens when the coordinated subjects consists of two nouns that differ in gender?

• Alltogether 9 combinations
  • 3 same-gender combinations: MM, FF, NN
  • 6 different-gender combinations: MF, MN, FM, FN, NM, NF
    • (directionality matters: MF and FM is not the same)
TWO DIFFERENT MECHANISMS

• 1. (Hierarchically) highest/first conjunct (Highest Conjunct Agr) – HCA/FCA
  • In SV – first (FCA) and at the same time the furthest conjunct
  • In VS – first (FCA), but at the same time closest

• 2. (Linearly) closest conjunct (Closest Conjunct Agr) – CCA
  • In SV - lowest ranked conjunct
  • In VS - highest ranked conjunct

• Never agreement with conjunct that is neither the highest/first nor the closest (conjunction with more than two conjuncts, second conjunct in VS)
PREVIOUS RESEARCH

• Bošković, 2009: CCA in SV positions blocked when M hierarchically highest/linearly first
  • ?*Svi gradovi i sva sela su (juče) uništena.

• Murphy and Puškar, 2014: CCA is an illusion

• Marušić et al. 2015: effects of mixing genders and directionality
  • Finding 1: Some default masculine agreement occurs even when both conjuncts are same gender (FF, NN)
  • Finding 2: More default agreement when conjuncts are neuter than feminine
  • Finding 3: Masc Agreement with Masc + non-Masc ambiguous: either default agreement or FCA/CCA
  • Finding 4: NF and FN cases reveal three distinct response types: highest, closest and default
EXPERIMENT: MATERIALS AND PARTICIPANTS

• Controlled experimental study
• 6 partner sites in 4 countries (Slovenia, Croatia 2x, Bosnia, Serbia 2x)
• Uniformity vs. Site specificity
  • uniform experimental testing battery at six universities in parallel
  • keep experimental settings as identical as possible
    • uniform stimulus design, presentation methods, number of participants
  • quantitative analysis
FIRST EXPERIMENT 2015

• **GOAL:** ELICIT SPOKEN AGREEMENT WITH THE PREVERBAL AND POSTVERBAL COORDINATED SUBJECTS.

• **TASK:** preverbal (1a) and postverbal (1b) coordinated subjects matched and non-matched in gender

• **TYPE OF EXPERIMENT:**
  • self-paced reading and sentence completion task
  • on-line elicited production task with digital recording of responses

• **PARTICIPANTS:** n=30 [1st year student, attended the local secondary school, non linguist, not students of B/C/S/S Language, F/M 50/50]

• **LANGUAGE/DIALECT/VARIETY:** Neutral dia-standard.
FIRST EXPERIMENT 2015

• EXPERIMENTAL ITEMS:
  • 9 conditions (matched: MM, FF, NN, non-matched: MF, MN, FM, FN, NM, NF)
  • 6 items per condition
    • 54 test examples, 54 fillers = total of 108 sentences
  • 2 subexperiments for preverbal and postverbal condition

• Model sentences used as primes for the test examples contained a simple non-conjoined singular subjects in Masculine.
PRESENTATION OF STIMULI

• Model sentence:
  • **Prijevod** je ovjeren pečatom.
  • translation.MASC.SG AUX.SG authenticated.MASC.SG seal

• Replacement phrase:
  • **Molbe i rješenja**
  • requests.FEM.PL and solutions.NEUT.PL

• Produced response:
  • **Molbe i rješenja su ovjeren-i-a-e pečatom**
  • requests.FEM.PL and solutions.NEUT.PL AUX.PL authenticated.MASC/FEM/NEUT.PL by.seal
PRELIMINARY RESULTS:
Zagreb SV vs. VS
NEW EXPERIMENT: ZAGREB 2016

• EXPERIMENTAL DESIGN

• SAME as 2015
  • IBEX
    • stimuli presentation
    • mostly the same sentences

• DIFFERENT from 2015
  • only SV position (54 exp stimuli and 54 fillers – 108 sentences)
  • adverbs and adverbial constructions preceded coordinated structure (informations structure concern)
  • presentation of stimuli somewhat different (memory concern)
  • different fillers
PRESENTATION OF STIMULI

• **Večeras** je pjenušac natočen u čaše.
  • **tonight.ADV** AUX.sg champagne.MASC.SG poured.MASC.SG ADV

• **Večeras** su vina i rakije ____________ u čaše.
  • **tonight.ADV** AUX.pl wines.N.SG and spirit.F.SG poured.MASC.SG ADV
FILLERS (animate M and F)

- Iznenada je mladić protrčao terenom.
  - A boy suddenly run across the court.

- Iznenada su sportašice i novinari ____________ terenom.
  - Sportswomen and reporters __________ the court.

- Iznenada je djevojka protrčala terenom.
  - A girl suddenly run across the court.

- Iznenada su sportašice i novinari ____________ terenom.
  - Sportswomen and reporters ____________ the court.
SORTING STIMULI

• 1: stimuli with the coordination between the same gender conjuncts (MM, FF, NN)

• 2: stimuli that include M as a FCA/HCA or CCA (MF, MN, FM, NM)

• 3: stimuli that do not include M (NF and FN)
### SV Agreement Zagreb 2016

#### SV Agreement

<table>
<thead>
<tr>
<th></th>
<th>MM</th>
<th>FF</th>
<th>NN</th>
<th>MF</th>
<th>MN</th>
<th>FM</th>
<th>NM</th>
<th>FN</th>
<th>NF</th>
</tr>
</thead>
<tbody>
<tr>
<td>No response</td>
<td>1.2%</td>
<td>1.7%</td>
<td>0.0%</td>
<td>2.5%</td>
<td>1.2%</td>
<td>3.1%</td>
<td>1.9%</td>
<td>0.0%</td>
<td>4.3%</td>
</tr>
<tr>
<td>N.pl.</td>
<td>0.0%</td>
<td>0.0%</td>
<td>83.3%</td>
<td>0.0%</td>
<td>35.8%</td>
<td>0.0%</td>
<td>4.3%</td>
<td>45.7%</td>
<td>9.3%</td>
</tr>
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<td>F.pl.</td>
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<td>90.1%</td>
<td>1.9%</td>
<td>26.5%</td>
<td>0.6%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>11.7%</td>
<td>46.9%</td>
</tr>
<tr>
<td>M.pl.</td>
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<td>8.2%</td>
<td>14.8%</td>
<td>71.0%</td>
<td>62.4%</td>
<td>96.9%</td>
<td>93.8%</td>
<td>42.6%</td>
<td>39.5%</td>
</tr>
</tbody>
</table>
SAME GENDER COORDINATION

• ASSUMPTIONS

• If there are three/four agreement grammars (&P, HCA/FCA, CCA), we might expect them to occupy the same percentages (either 33.3% each or 25% each).

• However, N behaves differently in sg (N.SG+N.SG=M) and sometimes in plural
  - Pismo i pero su poslani.   DEF
  - Pisma i pero su poslani.   DEF
  - Pero i pisma su poslani.   DEF

• Also, there is an option for F+F=M in singular!
  - ? Djevojčice i mačka su zaustavljeni.   DEF
SAME GENDER COORDINATION
DIFFERENT GENDER COORDINATION (with M)

• ASSUMPTIONS

• MF, FM, MN, NM

• expected difference between M in HCA/FCA and M in CCA

• testing difference between F and N in CCA
DIFFERENT GENDER COORDINATION (with M)
DIFFERENT GENDER COORDINATION (with M)

- **FM** – 96.9% M  
  **MF** – 71.0% M
- **NM** – 93.8% M  
  **MN** – 62.4% M
  - Significant difference between M as HCA/FCA and M as CCA (combined difference approximately 95 : 66)
  - Insignificant result (so far) between F and N as CCA

- **Why do I think M matters?**
  - because compared to NN and FF conditions:
    - **FF** – 90.0 % F
    - **NN** – 83.3% N
  - **M** in FM and NM is almost at the ceiling, such as in MM (98.8%) !!!
DIFFERENT GENDER COORDINATION (with M)

• In HCA/FCA condition (MF/MN), M complies with 3 out of 4 mapping constraints: HCA, FCA and &P (expect high percentage, around 75%)
  • WHAT WE GET?
    • MF – 71%
    • MN – 62.4%

• In CCA condition (FM/NM), M complies with only 2 mapping constraints: CCA and &P (expect lower percentage than in HCA/FCA)
  • WHAT WE GET?
    • FM – 96.9%
    • NM – 93.8%

• M in MF – 71% compared to 96.9% of M in FM
• M in MN – 62.4% compared to 93.8% of M in NM

• RESULTS obviously and strongly point in the direction of CCA agreement!
INTERIM CONCLUSIONS

• Same gender conjunct agreement and different gender conjunct agreement with M point to two conclusions:

  • **2. being Masc matters**
    • not insignificant number of Masc in Non-Masc conditions (FF and NN)
    • exceptionally high number of Masc in both +Masc condition (especially MF, MN)

  • **1. linearity matters**
    • percentage of M in CCA is significantly higher than in HCA/FCA
    • in comparison of HCA/FCA and CCA conditions, F and N gain some ground only in CCA condition
DIFFERENT GENDER COORDINATION (without M – only FN and NF)

• ASSUMPTIONS

  • FN and NF
  • all three agreement grammars expected
  • the same pattern expected for both conditions
  • after all, F in FN and N in NF expected to reach the lowest realization (because it’s HCA/FCA)
DIFFERENT GENDER COORDINATION (without M – only FN and NF)

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CONCLUSION

• THREE/FOUR STRATEGIES OF AGREEMENT among speakers and across them

• HCA somewhat sensitive to the value of gender (difference between N and F)

• CCA most widely spread agreement grammar, most efficient in terms of data integration