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)

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BASIC FACTS

- **AGREEMENT – South Slavic langauges**

  - 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

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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)

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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 agreeement 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

- Marušič 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.
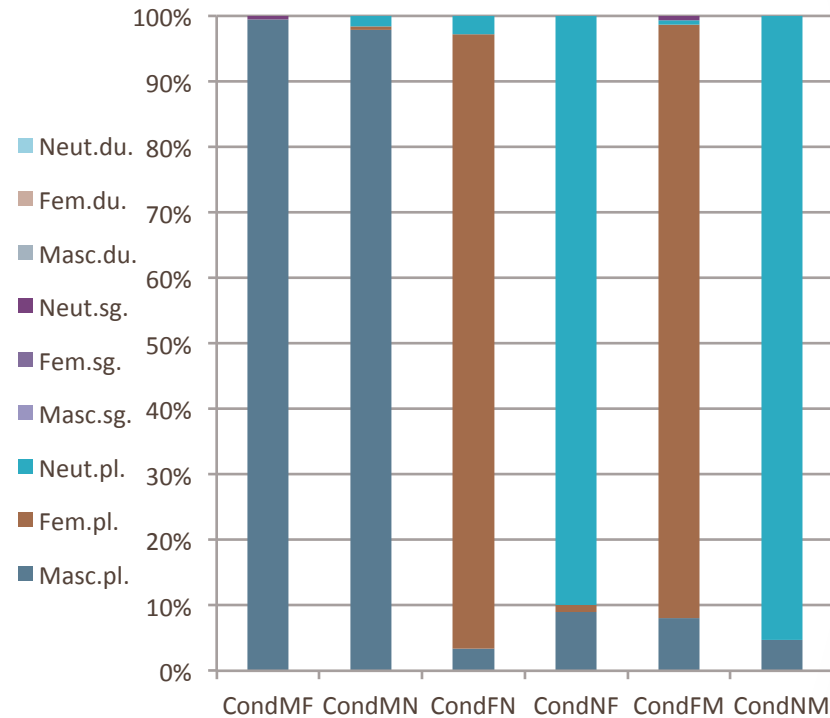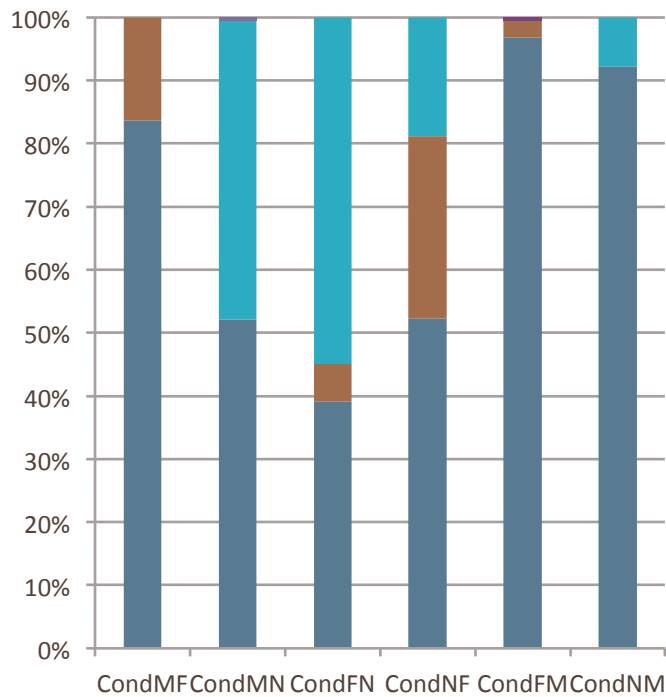
FIRST EXPERIMENT 2015

- **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

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  - 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 preceeded coordianated structure (informations structure concern)
    - presentation of stimuly 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.**
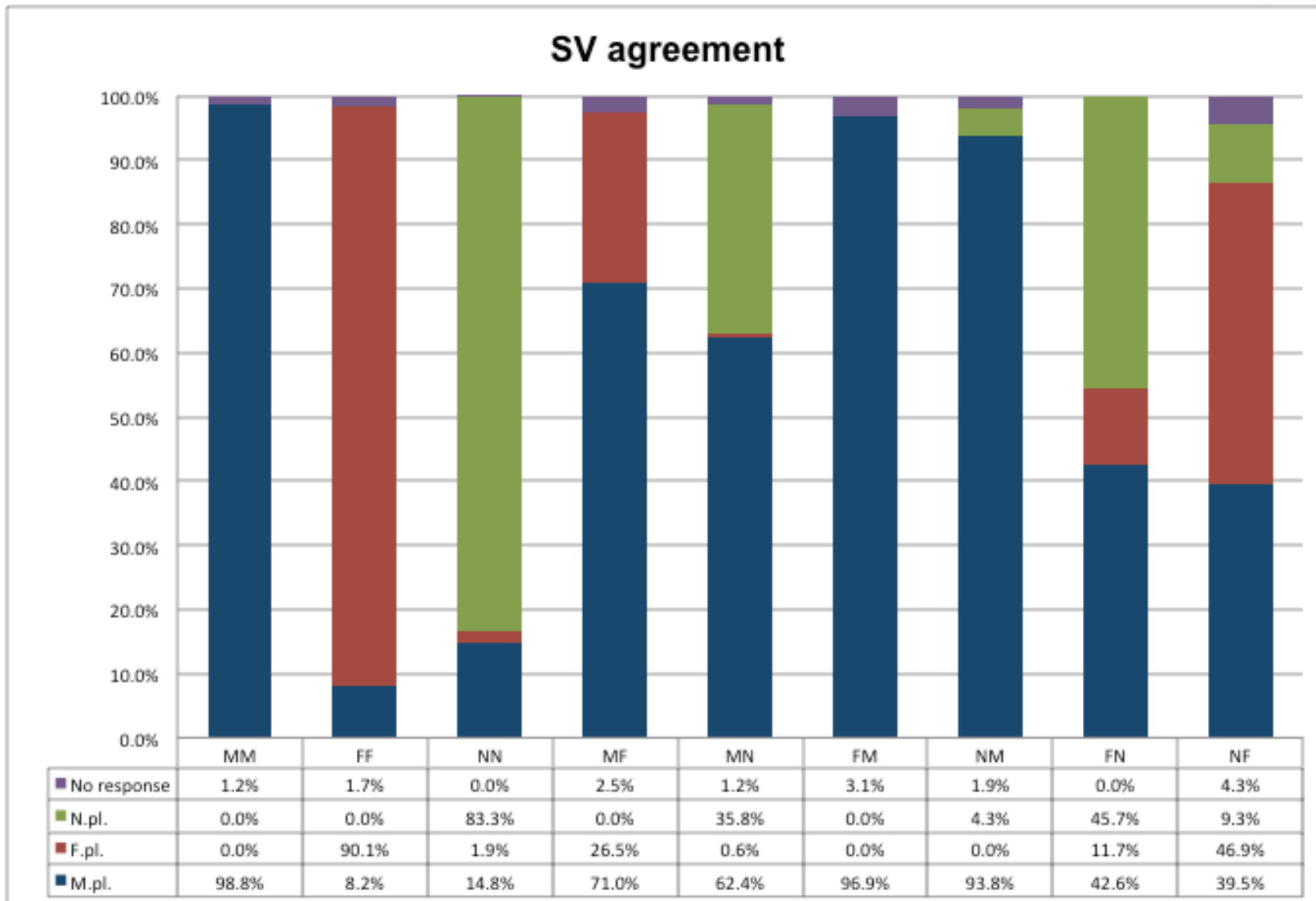- tonight.ADV AUX.pl wines.N.SG and spirit.F.SG poured.MASC.SG ADV

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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

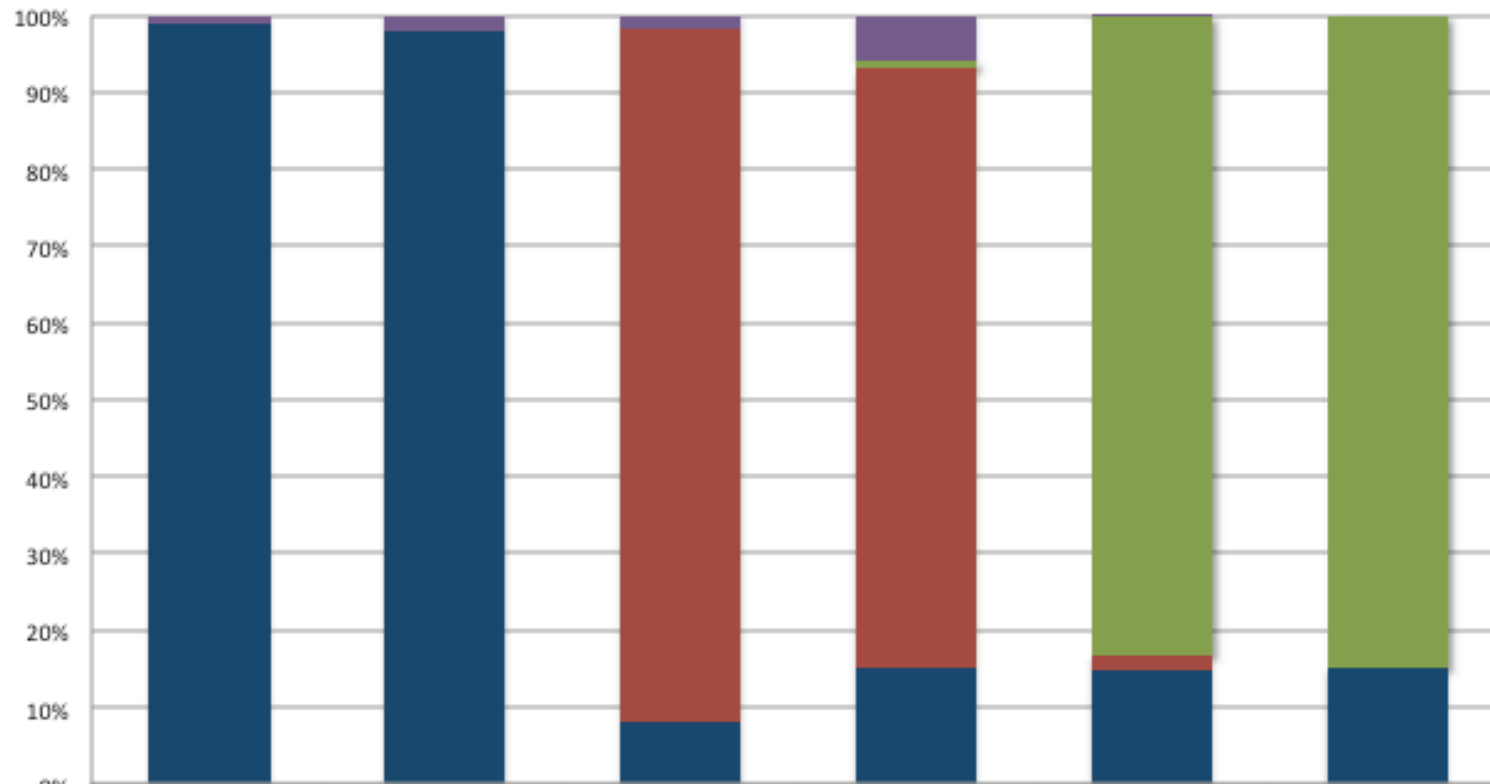|	MM	FF	NN	MF	MN	FM	NM	FN	NF
No response	1.2%	1.7%	0.0%	2.5%	1.2%	3.1%	1.9%	0.0%	4.3%
N.pl.	0.0%	0.0%	83.3%	0.0%	35.8%	0.0%	4.3%	45.7%	9.3%
F.pl.	0.0%	90.1%	1.9%	26.5%	0.6%	0.0%	0.0%	11.7%	46.9%
M.pl.	98.8%	8.2%	14.8%	71.0%	62.4%	96.9%	93.8%	42.6%	39.5%

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
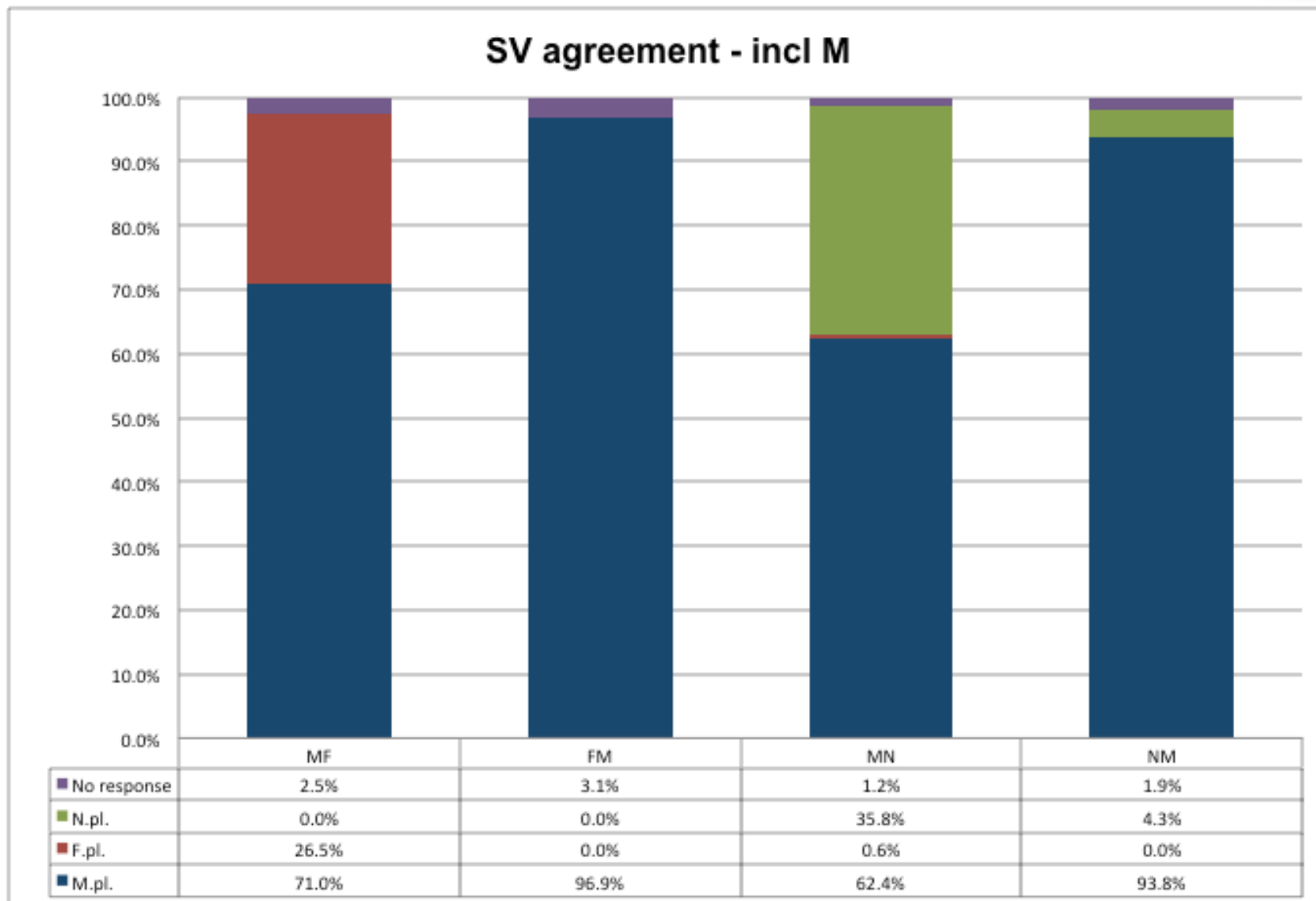

SV agreement - same gender

	MM 2016	MM 2015	FF 2016	FF 2015	NN 2016	NN 2015
No response	1.2%	2.0%	1.7%	6.0%	0.0%	0.0%
N.pl.	0.0%	0.0%	0.0%	1.0%	83.3%	85.0%
F.pl.	0.0%	0.0%	90.1%	78.0%	1.9%	0.0%
M.pl.	98.8%	98.0%	8.2%	15.0%	14.8%	15.0%

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)

SV agreement - incl M

	MF	FM	MN	NM
No response	2.5%	3.1%	1.2%	1.9%
N.pl.	0.0%	0.0%	35.8%	4.3%
F.pl.	26.5%	0.0%	0.6%	0.0%
M.pl.	71.0%	96.9%	62.4%	93.8%

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!**
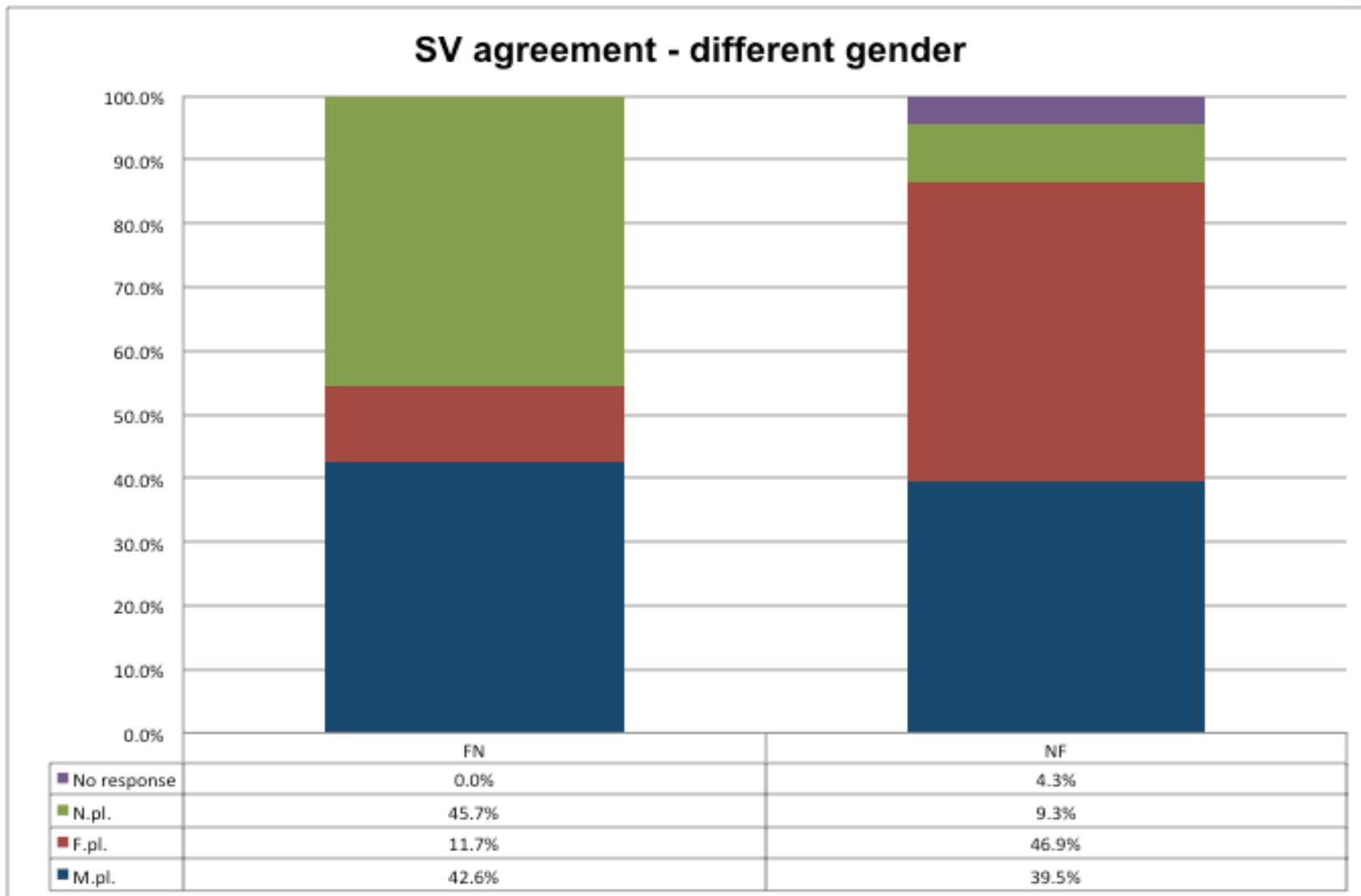
INTERIM CONCLUSIONS

- 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 higer 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 agreeement 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)

SV agreement - different gender

	FN	NF
■ No response	0.0%	4.3%
■ N.pl.	45.7%	9.3%
■ F.pl.	11.7%	46.9%
■ M.pl.	42.6%	39.5%

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