Why Russian counts and binds: on D, PERSON, and the role of φ-Agree

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overarching question: the double-life of person

- person ~ formal connection between morphosyntactic properties of a DP and its referential interpretation

- **narrow syntax**: case assignment, agreement—via labeling

- **CI interface**: formal connection to index—via person modeled as [+/- participant]

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empirical focus

- micro-variation in numeral constructions in Slavic

- this talk: Czech vs Russian 5&up numerals

Russian

èti	posledn-ie	‖ dv-a	‖ krasiv-ych	stol-a
these- NOM.PL	last- NOM.PL	**two**-M.NOM	beautiful- GEN.PL	table- GEN.**SG**

'these last two beautiful tables'
RUSSIAN PAUCAL

èt-i	posledn-ie	‖ pjat'	‖ krasiv-ych	stol-ov
these- NOM.PL	last- NOM.PL	**five**-NOM	beautiful- GEN.PL	table- GEN.**PL**

'these last five beautiful tables'
RUSSIAN 5&UP

nominative ←——— **<5 5&up** ———→ **genitive**

Czech

<5: nominative (adjectival nominal)

t-y-to   posledn-í   dv-a   krásn-é   stol-y
DEF-M.PL-this.|NOM| last-|NOM.PL| **two**-M.NOM beautiful-|NOM.PL| table-|NOM.PL|
'these last two beautiful tables'   CZECH <5: ✓NOM

Czech

<5: nominative (adjectival nominal)

t-y-to   posledn-í   dv-a   krásn-é   stol-y
DEF-M.PL-this.|NOM| last-|NOM.PL| **two**-M.NOM beautiful-|NOM.PL| table-|NOM.PL|
'these last two beautiful tables'   CZECH <5: ✓NOM

5&up: genitive

t-ěch   posledn-ích   pět   krásn-ých   stol-ů
these-|GEN.PL| last-|GEN.PL| **five**-NOM beautiful-|GEN.PL| table-|GEN.PL|
'these last five beautiful tables'   CZECH 5&UP: ✓GEN

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to be argued for

- nominative = DP labeled by person

- => Russian: labeled by person

- => Czech: not labeled by person

- reason: distinct locality properties of person/index

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no person label in Czech

evidence:

- no predicate agreement

- (no licensing of secondary predicates - appendix)

- no boolean conjunction

- anaphoric agreement as for split-antecedent pronouns in the absence of person

part I
what's in the label
(narrow syntax)

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predicate agreement

Russian: ✓sg, ✓pl

pjat'   malčikov   prišlo/   prišli
five.NOM boys.GEN.PL came.N.SG/ came.PL
'(the) five boys came'

(Corbett 1979)

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predicate agreement

Czech 5&up: ✓sg, *pl

Pět   chlapců   přišlo   / *přišli.
five.nom boys-gen.pl came.n.sg / *came.m.pl
'Five boys came.'

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what features on 5&up?

- valued phi-features (n.sg)?

- or no valued phi-features in the label? => n.sg as failed agree?

test: intra-sentential anaphora

- either grammatical features present in the DP label, or semantic features

Děvče   přišlo.   Ono/   ona...
girl.N.SG came.N.SG it.N.SG/ she.F.SG
'A/the girl came. She [=the girl]...'

✓n, ✓f

5&up: failed agree

- no anaphors to grammatical features; only semantic features:

Pět   chlapců   přišlo.   *Ono/ oni...
five.NOM boys-GEN.PL came.N.SG it.N.SG/ they.M.PL
'Five boys came. They [=the five boys] ...'

*n.sg, ✓m.pl

- => no valued phi-features in the label of the 5&up

test: number in coordination

- number in DP coordination based on boolean conjunction (Munn 1993)

- independent of grammatical number

- prediction: even if number feature on 5&up is unvalued (or missing), semantic plurality should still be an option

no semantic plurality

Pět chlapců   a   pět dívek   se   sešlo/   *sešli v klubu.
five boys.GEN and five girls.GEN REFL get-together. N.SG / *M.PL in club
'Five boys and five girls met in the club.'

no semantic plurality

- phi-feature deficiency in and of itself does not explain this pattern

- proposal: 5&up numerals not labeled for person

part II
how many persons are in plural
(syntax-semantics interface)

assumption: person ~ index

- syntax-semantics interface: a formal association between person feature and referential index

- person = [+/−participant] (Nevins 2007 and literature cited there)

index association

- [+person] => [+participant] => index always part of the representation (at Transfer)   (1st, 2nd person)

- [−person] => [−participant] => index computed later in CI but does not need to be represented at the syntax-semantics interface   (3rd person)

- no person => no association with index   (5&up)

how to test for person?

- if 5&up not labeled for person, they should behave in syntactic environments sensitive to person/index as <u>unspecified for person</u>

- case study: features in DP coordination

- method: we can investigate features on coordination, using what we <u>independently</u> know about semantic plurality and anaphoric agreement

core insight

- Farkaş and Zec (1995): features of DP coordination identical to features of <u>corresponding anaphoric pronouns</u>

- features calculated as combination of semantic and morphosyntactic features (King and Dalrymple 2004, Haycock and Zamparelli 2005, among others)*

*Contra semantics only (e.g. Lasersohn 2013) or morphosyntax only (e.g. Marušič et al. 2015)

step I: semantic plurality

$$i + i \rightarrow \text{SG}$$
$$i + j \rightarrow \text{PL}$$

a. matching indices $\Rightarrow$ SG
b. non-matching indices $\Rightarrow$ PL

a. his best friend$_i$ and editor$_i$ **is** by his bedside
b. his best friend$_i$ and editor$_j$ **are** by his bedside

step II: person features

- Heim (2008)'s algorithm for calculating person features on split-antecedent pronouns

(i)   If i or j is unspecified for person, then leave $i + j$ unspecified.
(ii) Otherwise, if i or j is 1st person, then specify $i + j$ as 1st person.
(iii) Otherwise, if i or j is 2nd person, then specify $i + j$ as 2nd person.
(iv) Otherwise, specify $i + j$ as 3rd person.

step III: order of operations

- 1. semantic plurality

- 2. syntactic Agree based on phi-features present in the labels of conjuncts

- 3. post-syntactic agreement

case I:
5&up and DP marked as [+person]

- 5&up: no person, no index

- [+person]: obligatory index

- => plural [because of non-matching indices]

- => person feature valued determined by the other DP

5&up and [+person]

Já/ty   a   pět chlapců   jsme/jste šli/   *šlo   do ZOO.
I.NOM/you.NOM and five boys.GEN.PL AUX.1/2.PL gone.M.PL/ gone.N.SG to zoo
'I/you and five boys went to the zoo.'

*sg, ✓1/2pl

case II: 5&up and 5&up

- 5&up: no person, no index

- no indices => no non-matching indices => sg

- no phi-features to calculate agreement either

- => failed agree

5&up and 5&up

Pět chlapců a pět dívek se sešlo/ *sešli v klubu.
five boys.GEN and five girls.GEN REFL get-together.N.SG/ *M.PL in club
'Five boys and five girls got together in the club.'

✓sg, *pl

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case III: 5&up and [-person]

- 5&up: no person, no index

- [–person]:

  - => index obligatory at CI

  - => index optional at the syntax-semantics interface

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prediction I: two agreement patterns

- index at the interface => <u>plural</u>, 3rd person

- index at CI => no index to calculate semantic plurality => [stay tuned]

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index at the interface

a. Děvčata a **pět chlapců** šli do ZOO.
   girls.N.PL and five boys gone. M.PL to zoo
   'Girls and five boys went to the zoo.'

b. Pět chlapců a **děvčata** šli do ZOO.
   five boys and girls.N.PL gone. M.PL to zoo
   'Five boys and girls went to the zoo.'

✓pl

prediction II: index at CI

- no index => no semantic plurality

- step II: syntactic Agree based on morphosyntactic phi-features => no phi-features on 5&up => failed agree

- step III: if applicable, post-syntactic agreement as last resort (Bhatt & Wallkow 2013)

pattern I

- if the morphologically adjacent DP is 5&up => no phi-features in the locality domain for post-syntactic agreement

- => only option: failed agree (n.sg)

5&up closer

Děvčata   a   **pět chlapců** šli/   šlo/   *šla do ZOO.
girls.N.PL and five boys   gone. M.PL / N.SG / N.PL to zoo
'Girls and five boys went to the zoo.'

✓**pl / failed agree**

pattern II

- morphologically adjacent DP: [–person] => post-syntactic morphological copying of the phi-features of the label

- => `closest conjunct agreement' (cf. Marušič et al 2015)

[-person] closer

Pět chlapců a **děvčata** šli/   *šlo/ šla   do ZOO.
five boys   and girls.N.PL gone. M.PL / N.SG/ N.PL to zoo
'Five boys and girls went to the zoo.'

✓pl / closest conjunct agreement

interim summary

pattern:

- 5&up + 5&up => failed agree

- 5&up + [+person] => plural [+person]

- [−person] + 5&up => failed agree

- 5&up + [−person]: => closest conjunct agreement

=> no person in the 5&up label

part III
why is Russian different?

reminder

- Russian: nominatives + semantic plurality across the board

- Czech: genitive + no semantic plurality

core idea

- distinct locality properties for associating person with index

- Czech: person too deeply embedded in the numeral construction to label

- Russian: person can "escape" and associate with index in a locally restricted domain

independent evidence

- differences in binding

- Czech: c-command only*

- Russian: non c-commanding pronominal elements may bind as well

*Reflexive pronouns establish their coreference at vP (Kratzer 2009).

binding differences create a break

a. *Eë$_i$ učitel'nica   poxvalila Mašu$_i$.
   her teacher.NOM praised   Maša.ACC
   'Her$_i$ teacher praised Maša$_i$.'
b. Její$_i$ učitelka   pochválila Mášu$_i$.
   her   teacher.NOM praised   Maša.ACC
   'Her$_i$ teacher praised Maša$_i$.'

*Russian (Principle C violation) / ✓Czech

index raising

- in Russian indices may label the immediately dominating projection (Nikolaeva 2014)

- in Czech they cannot

consequence

- person/index raising in Russian but not in Czech

- => correlation between nominatives, binding and semantic plurality

theoretical conclusions

- nominative ~ DP labeled by person

- formal connection between case and person (Schütze 1997, Martin 1999, Chomsky 2000, Béjar and Rezac 2003, Rezac 2004, Richards 2008)

theoretical conclusions

- formal connection between person and index

- (Longobardi 2008, Sudo 2012, Landau 2010, among many others)

theoretical conclusions

- DP coordination with numerals not special in any way

- agreement with coordination, including coordination of numeral constructions, shares properties with anaphoric agreement (semantic component), enriched by morphosyntactic agreement (including failed agree, and last resort post-syntactic agreement)

theoretical conclusions

- cross-linguistic variation not only in feature bundling but also in labeling

acknowledgements

appendix I: argument DP?

DP?

- DP labeled for person or no D layer (Pesetsky 2013)?

5&up: genitive

t-ěch	posledn-ích	pět	krásn-ých	stol-ů
these-GEN.PL	last-GEN.PL	**five**-NOM	beautiful-GEN.PL	table-GEN.PL

'these last five beautiful tables'   CZECH 5&UP: ✓GEN

D-elements

✓ **demonstratives, possessives**

těch/ našich posledn-ích pět krásn-ých stol-ů
these.GEN.PL/ our.GEN.PL last-GEN.PL five.NOM beautiful-GEN.PL table-GEN.PL
'these/our last five beautiful tables' CZECH 5&UP

D-elements

✓ **D-quantifiers**

každye/ vse pjat' krasivyx stolov
each.NOM.PL / all.NOM.PL five.NOM beautiful.GEN.PL tables.GEN.PL
'each/all five beautiful tables' RUSSIAN: NOM

každých/ všech pět krásných stolů
each.GEN.PL / all.GEN.PL five.NOM beautiful.GEN.PL tables.GEN.PL
'each/all five beautiful tables' CZECH: GEN

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structural status

✓ **arguments**

Pět chlapců poslalo dopis.
five.NOM boys.GEN.PL sent letter.ACC
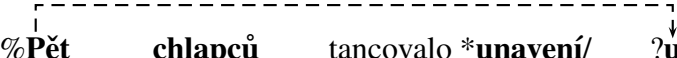'Five boys sent a/the letter.'

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structural status

* **nominal predicates**

a. Ti vrazi byli tři cizinci.
those.PL murderers were.PL **three**.NOM foreigners.NOM.PL
'The murderers were three foreigners.' ✓3

b. *Ti vrazi byli/bylo pět cizinců.
those.PL murderers were.PL/was.N.SG **five**.NOM foreigners.GEN.PL
'The murderers were five foreigners.' *5

secondary predicates

- licensing of secondary predicates possible for some speakers

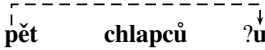- but only in configurations that allow for morphological copying of phi-features

✓adjacency

%**Pět**   **chlapců**   tancovalo ***unavení**/   ?**unavených**.
five.NOM boys.GEN.PL danced   tired.NOM.PL/ tired.GEN.PL
intended: 'Five boys danced tired.'

no adjacency

Pět chlapců   sledovalo   **čtyři**   **děvčata**   ***unavených**/ ***unavení**.
five boys.GEN.PL watched.N.SG four.ACC girls.ACC.PL tired.GEN.PL/ tired.NOM.PL
'Five boys$_i$ watched four girls tired$_i$.'

scrambling: adjacency restored

Čtyři děvčata   sledovalo   **pět**   **chlapců**   ?**unavených**/ ***unavení**.
four   girls.ACC.PL watched.N.SG five.NOM boys.GEN.PL tired.GEN.PL/ tired.NOM.PL
'Five boys$_i$ watched four girls tired$_i$.'

summary

- 5&up are argument DPs