

On number and number-neutrality in languages with and without articles

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Languages without articles

- **Universal DP:** are structurally like languages with articles (DPs/NPs):
 - Pereltsvaig (2001a, 2006, 2007a, b, 2008, 2009), Franks & Pereltsvaig (2004); Rappaport (1992, 1998, 2001), Engelhardt & Trugman (1998), Progovac (1998), Leko (1999), Rutkowski (2002a, b, 2006, 2007, in press), Rutkowski & Maliszewska (2007)
- **Parameterized DP:** are structurally very different from languages with articles (NPs only):
 - Chierchia (1998), Willim (1998, 2000), Baker (2003: 113), Mahajan (2003), Trenkic (2004), Bošković (2005, 2008, 2009)



Number in languages with articles

- Ritter (1991, 1992), Borer (2004):
 - number is syntactic (whereas gender is lexical)
 - functional projection NumP
 - in much of the literature on Slavic -- QP
 - hosts plural morphology
 - noun-to-Num movement (and possibly on to D)



Number in languages without articles

- **Universal DP:** number is expressed in NumP
 - Pereltsvaig (2001a, 2006, 2007a, b, 2008, 2009), Rutkowski (2002a, b, 2006, 2007, in press), Bailyn (2004)
- **Parameterized DP:** number is expressed on the noun itself
 - no functional projection to host number externally to NP



Proposal

- Morphological number and semantic number are mediated by **syntactic number**
- Number is expressed **in NumP**
 - in languages **without articles** (as well as with)
- This projection hosts number **feature**, not number morpheme
 - number morphology isn't always an expression of the corresponding number feature
- Nominals lacking NumP are **number-neutral**



Number (mis)matches

| | | |
|----------------|----------|-------------|
| Morphological: | singular | plural |
| | ↑ | ↑ |
| Semantic: | '1' | '2 or more' |

Number mismatches: “inclusive plurals”

Morphological: singular plural



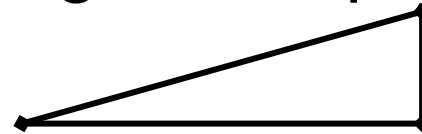
Semantic: ‘1’ ‘2 or more’

- (1) a. Do you have **kids**? Yes, I have **one**.
b. If you have **kids**, please raise your hand.
c. Everyone who has **kids**, raise your hand.
d. Ed didn't see **kids**. (False if Ed saw **one** kid)

In downward entailing contexts (cf. Sauerland et al. 2005; also Sauerland 2003, Spector 2003, Sauerland, Anderssen & Yatsushiro 2005)

Number mismatches: “inclusive plurals” in Russian

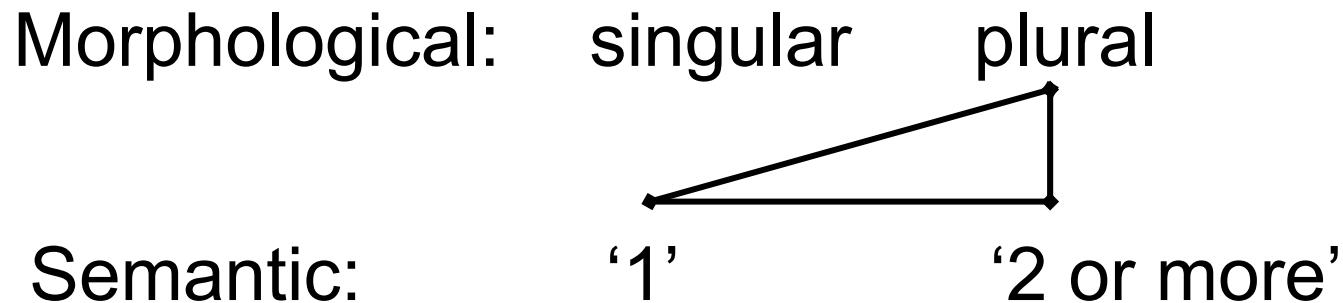
Morphological: singular plural



Semantic: ‘1’ ‘2 or more’

- (2) U vas est’ **deti**? – Da, u menja est’ **rebënok**
to you there-is children yes to me there-is child
‘Do you have **(one or more)** children?’

Number mismatches: Genitive complements of intensive reflexives in Russian



- cf. Tatevosov (2006), Kagan & Pereltsvaig (2011)

(3) Lena *na-jela-s'* **kotlet.**

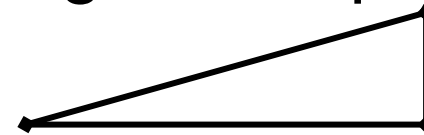
Lena *na-ate-sja* cutlets(GEN)

'Lena ate her fill of cutlets.' =

= 'Lena ate (one or more) cutlets & Lena doesn't want to eat (one or more) cutlets anymore.'

Number mismatches: complements of v 'into' in Russian

Morphological: singular plural



Semantic: '1' '2 or more'

- cf. Bailyn (2002), Pereltsvaig (2006)

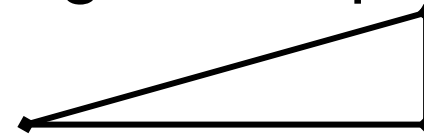
(4) Medvedeva vybrali v **prezidenty**.

Medvedev they-elected into president_s

'Medvedev has been elected president.'

Number mismatches: complements of v 'into' in Russian

Morphological: singular plural



Semantic: '1' '2 or more'

- cf. Trugman (2009), Pesetsky (2010)

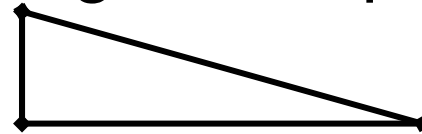
(5) klonirovanie **životnyx** / remont **avtomobilej**

cloning animals **s** / repairing cars **s**

'cloning of animals/an animal'; 'repair of cars/a car'

Number mismatches: “inclusive singulars” in Norwegian

Morphological: singular plural



Semantic: ‘1’ ‘2 or more’

- Cf. Kalulli (1997), Borthen (2003), Pereltsvaig (2006)

(6) Per har hatt **hund** i ti år. **Alle** har vært svært snille.

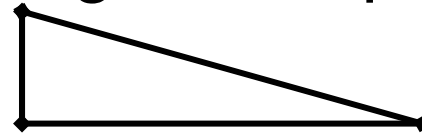
Per has had dog in ten years all have been very kind

‘Per has had (**one or more**) dogs for ten years. They all have been very kind.’

- Other languages with articles and bare singulars: Brazilian Portuguese, Spanish, Catalan?

Number mismatches: “inclusive singulars” in Armenian

Morphological: singular plural



Semantic: ‘1’ ‘2 or more’

- (Eastern) Armenian (cf. Dum-Tragut 2009: 106)

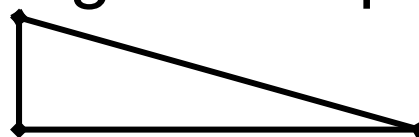
(7) Dursek a pòłoc’ **mard** tes a.

go out AUX.1.SG.AOR street person.NOM see AUX.1.SG.AOR

‘I went out on the street and saw **(one or more)** persons.’

Number mismatches: “inclusive singulars”

Morphological: singular plural



Semantic: ‘1’ ‘2 or more’

- (Eastern) Armenian (cf. Megerdooomian 2011)

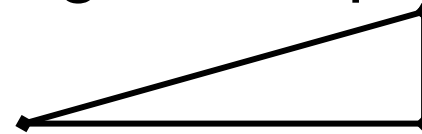
(8) Ara-n **girk^h** a ań-el.

Ara-NOM book AUX.3SG.PR buy-PERF

‘Ara has bought **(one or more)** books.’

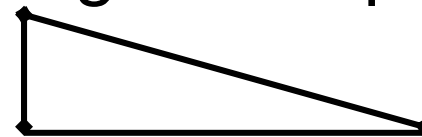
Two sides of the same coin – “number-neutral nominals”?

Morphological: singular plural



Semantic: ‘1’ ‘2 or more’

Morphological: singular plural



Semantic: ‘1’ ‘2 or more’

**Both “inclusive plurals” and “inclusive singulars” have
the same interpretation:
{a, b, c, ab, ac, bc, abc}**



Two sides of the same coin – “number-neutral nominals”?

- Complementary distribution of “inclusive singulars” and “inclusive plurals”
- Both “inclusive plurals” and “inclusive singulars” are
 - not necessarily licensed in a Downward Entailing context (contra Sauerland et al. 2005, a.o.)
 - syntactically selected, but not syntactically incorporated (à la Baker)
 - fit the syntactic profile of a Small Nominal (Pereltsvaig 2006)
- Whether a language has “inclusive plurals” or “inclusive singulars” **does not correlate with the presence/absence of articles**

Complementary distribution of “inclusive singulars” and “inclusive plurals”

- (Western) Armenian (cf. Bale et al. 2010):

(9) **Bezdig** unis?

child have(2.SG)

‘Do you have **(one or more)** children?’

(10) **Bəzdig-ner** unis?

child-(INDEF.PL) have(2.SG)

‘Do you have **(two or more)** children?’

(11) jete **bəzdig-ner** unis, dun kəna.

if child-(INDEF.PL) have(2.SG), home go(2.SG)

‘If you have **(two or more)** children, then go home!’

(12) amen mart vor **bəzdig-ner** uner vodk-i gajne-tsav

All person that child-(INDEF.PL) had foot-(GEN/DAT) stand-up

‘Everyone who had **(two or more)** children stood up.’

Are these Downward Entailing contexts?

- Genitive complements of intensive reflexives (*na-sja* verbs)

(13) Lena najelas' **fruktov.** → Lena najelas' **jablok.**

Lena *na-ate-sja* fruits Lena *na-ate-sja* apples

'Lena ate her fill of fruit.' 'Lena ate her fill of apples.'

- Complements of *v* 'into'

(14) Medvedeva vybrali *v* **prezidenty.** ~~→~~ *v* **prezidenty S.Sh.A.**

Medvedev they-elected into presidents into presidents U.S.A.

'Medvedev has been elected president.'



Where do number-neutral nominals appear?

- Objects (= complements of V)
 - only of certain verbs
- Complements of P
- Selected by verbal morphology (na+sja)
- Predicative position (= complements of copula)
- Rarely, in subject position (of unaccusative verbs and copula)

→ **Syntactically selected**

Not N-incorporation (à la Baker)

(15) Lena na-jela-s' **rybnyx kotlet.**

Lena *na-ate-sja* fish cutlets(GEN)

'Lena ate her fill of fish cakes.'

(16) Medvedeva vybrali v **prezidenty S.Sh.A.**

Medvedev they-elected into presidents U.S.A.GEN

'Medvedev has been elected president.'

(17) Jeg ønsker meg **svart sykkel.**

I want REFL black bike

'I want some black bike or other.' (Borthen 2003: 26)



Syntactic properties of number-neutral nominals

- Bare NPs (Small Nominals; cf. Pereltsvaig 2006):
 - No expression of specificity
 - No expression of quantity
 - No expression of reference/definiteness
 - No high adjectival modifiers (in the sense of Svenonius 2008, Beuseroy and Knittel 2008)
 - No movement for scope (surface scope only) or focus
 - No controlling PRO, anaphora or agreement (where applicable)

No expression of specificity

- Russian complements of intensive reflexives:

(18) *Ja najelas' **opredelënnyx** **kotlet.**
I *na-ate-sja* specific cutlets

- Russian complements of v 'into':

(19) *On izbiraetsja v **opredelënnye** **prezidenty.**
He being-elected into specific presidents

- Norwegian bare singulars:

(20) *Jeg hadde på meg **viss** **gul skjorte.**
I had on me certain yellow shirt

- (Eastern) Armenian:

(21) Ara-n **girk^h-ə** aʔ-el a.
Ara-NOM book-SP buy-PERF AUX.3SG.PR
'Ara has bought {the / a specific} book.' ← **not number-neutral**

No expression of quantity

- Russian

(22) *Ja najelas' **pjati kotlet.**

I *na-ate-sja* five cutlets

(23) *Ja napilas' **stakana vody.**

I *na-drink-sja* glass water

(24) *Obama i Medvedev byli izbrany v **dva prezidenta.**

Obama & Medvedev were elected into two presidents

'Obama & Medvedev were elected into presidents.'

- (Eastern) Armenian (cf. Megerdoomian 2011)

(25) yerex-erk-ə **me hat muk** en č'ar-el.

child-PL-NOM one CL mouse AUX.3PL.PR find-PERF

'The children have found a mouse.' ← **not number-neutral**

No movement for scope or focus

- Russian complements of intensive reflexives -- surface scope only:

(26) Lena nasmotrelas' **francuzskix** **fil'mov.**
 Lena *na*-watched-*sja* French films
 'Lena has watched French films to the limit.'
 (French films in general, not specific films)

- Norwegian bare singulars -- surface scope only (Borthen 2003: 24):

(27) Alle barna prøvde **jakke.**
 all children.DEF tried.on jacket
 'All the children tried on some jacket or other.'

- Armenian bare singulars -- stay in vP (cf. Megerdooian 2011)

(28) a. Ara-n **[girk^h** a aʔ-el].
 Ara-NOM book AUX.3SG.PR buy-PERF
 'Ara has bought {a book/books}.'

b. Aram-ə **girk^h-ə** a [aʔ-el].

Aram-NOM book-SP AUX.3SG.PR buy-PERF
 'It is the (specific) book that Aram bought.'

arag
'fast'



Recap:

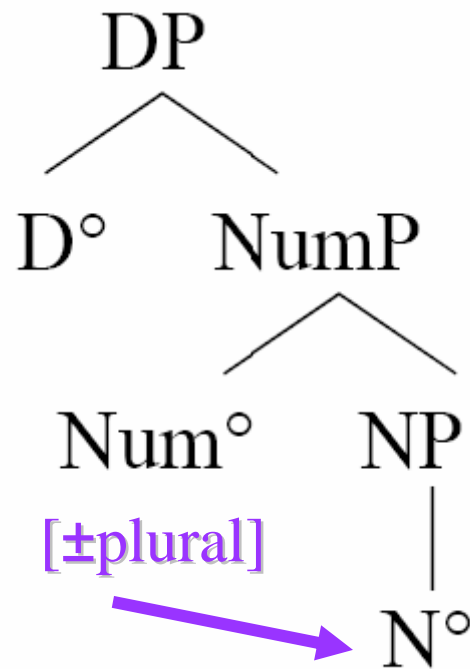
- Number-neutral nominals are
 - syntactically bare NPs
 - morphologically either plural (English, Russian) or singular (Norwegian, Armenian)
- Singular or Plural? This is a parameter
- Does it correlate with availability of articles?

Expression of number-neutrality and articles (vs. Gil/Boškovič)

| | Articles | No articles |
|----------|-----------|-------------|
| Singular | Norwegian | Armenian |
| Plural | English | Russian |

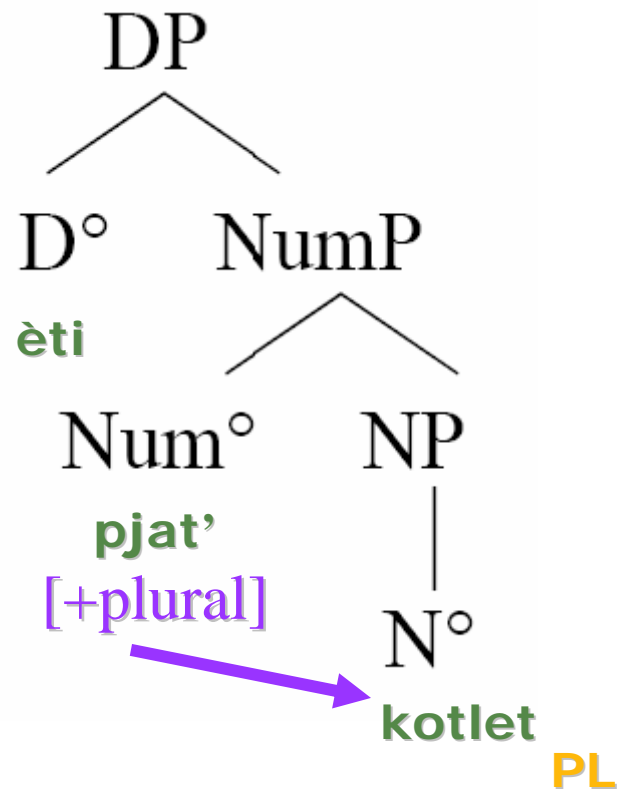
Analysis: syntactic number and number-neutral nominals

- Syntactic number
- Number-less nominals



Syntactic number in Russian

- ‘these five cutlets’
- ‘cutlets’





Consequences of the analysis

- Russian nominals with paucal numerals
- Russian nominals with *pluralia tantum* nouns

Russian: paucal numerals

- Paucal numerals: *dva* '2', *tri* '3', *četyre* '4', complex numerals ending in 2-4, *pol* '1/2' and *poltora* '1 1/2'
- cf. Babby (1987), Franks (1995, 1998), Ionin & Matushansky (2004, 2006), Rappaport (1998, 2004), Corbett (2008), Pesetsky (2010), a.o.

Pesetsky (2010):

numberless

- | | | | |
|----|--|----|--|
| a. | tri stol-a three table(MASC)-GEN.SG 'three tables' | d. | pjat' stol-ov five table(MASC)-GEN.PL 'five tables' |
| b. | tri gor-ý three mountain(FEM)-GEN.SG 'three mountains' | e. | pjat' gor-Ø five mountain(FEM)-GEN.PL 'five mountains' |
| c. | tri gorničn-ye three maid(FEM)-NOM.PL 'three maids' | f. | pjat' gorničn-yx five maid(FEM)-GEN.PL 'five maids' |

???

Russian: paucal numerals

My proposal:

Number: [paucal] = [-SG, -AUGM]
(cf. Bailyn & Nevins 2008)

Form: GEN.SG = NOM.DU

- | | | | |
|----|--|----|--|
| a. | tri stol-a three table(MASC)-GEN.SG 'three tables' | d. | pjat' stol-ov five table(MASC)-GEN.PL 'five tables' |
| b. | tri gor-ý three mountain(FEM)-GEN.SG 'three mountains' | e. | pjat' gor-Ø five mountain(FEM)-GEN.PL 'five mountains' |
| c. | tri gorničn-ye three maid(FEM)-NOM.PL 'three maids' | f. | pjat' gorničn-yx five maid(FEM)-GEN.PL 'five maids' |

the syncretism spread only to nominal declensions; with adjectival declension PL takes over DU slots

Morphology of Old Russian

○ already in Old Church Slavonic

| declension | SG | | DU | | | PL |
|----------------------------------|---------|----------|---------|---------|-----------|---------|
| | NOM | GEN | NOM/ACC | GEN/LOC | DAT/INSTR | NOM/ACC |
| C-declension 'friend' | drug-ъ | drug-a | drug-a | drug-u | drug-oma | druz-i |
| <i>o</i> -declension 'number' | čisl-o | čisl-a → | čisl-a | čisl-u | čisl-oma | čisl-a |
| <i>a</i> -declension | žen-a | žen-y → | žen-y | žen-u | žen-ama | žen-y |
| adjectival declension (FEM) | nov-aja | nov-yja | nov-Ei | nov-uju | nov-yima | nov-yja |

Morphology vs. syntax

Pesetsky (2010):

syntactic account

no account!!!

tri krasiv-ye

gorničn-ye

three beautiful.NOM.PL maid(FEM).NOM.PL

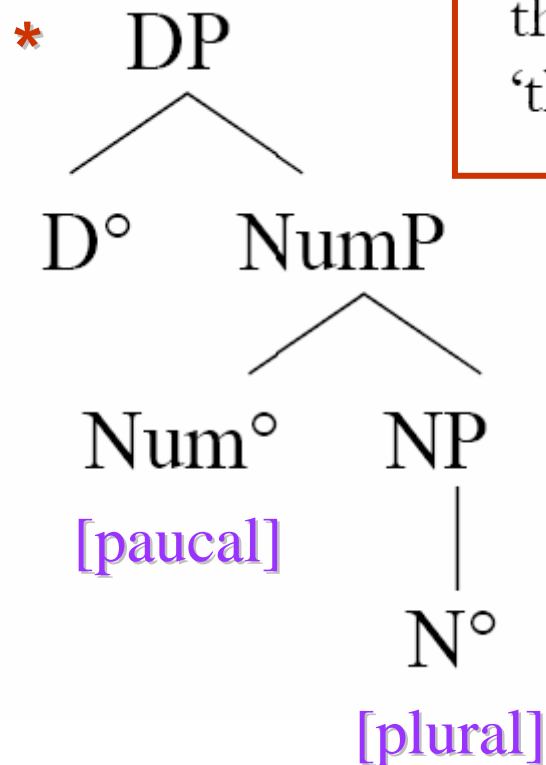
‘three beautiful maids’

My proposal:

same morphological account

Russian nominals with *pluralia tantum* nouns

- Observation: pluralia tantum nouns cannot occur with paucal numerals



*tri sutok /sutki
 three 24-hour-period.GEN/NOM.PL
 'three / five 24-hour periods'

troe / pjat' sutok
 three / five 24-hour-period.GEN.PL



Questions for future research

- Does the morphological expression (singular vs. plural) of number-less nominals correlate with anything else?
- Possibly with a degree of fusion:
 - in Russian number is encoded by the same morpheme as case (and declension class)
 - in Armenian the number morpheme is separate
- A wider typological study is needed.



Thank you!

- I am grateful to Kaya Borthen, Greville Corbett, Scott Grimm, Olga Kagan, Beth Levin, Karine Megedoomian and David Pesetsky for very inspiring and helpful discussions.
- The bibliography and an electronic version of these slides are available upon request:

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