

Derived collectives in Slavic: Decomposing groups, swarms, and aggregates

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Collective nouns

Group nouns (Barker 1992) or bunch nouns (Schwarzschild 1996):

- ▶ involve not only individuals, but also events and degrees

- (1)
 - a. group of objects
 - b. sequence of events
 - c. range of numbers

- ▶ standard assumption: homogeneous category
- ▶ plural denotation (Munn 1998, Elbourne 1999)
- ▶ atomic denotation (Baker 1992, Schwarzschild 1996)
- ▶ group-formation (Landman 1989, 2000)

Recent findings: distinct classes

- ▶ Pearson (2011): committee nouns vs. collection nouns
- ▶ Henderson (2017): group nouns vs. swarm nouns

Landman (2000):

- ▶ collective body formation → swarms
- ▶ collective action → groups/swarms
- ▶ collective responsibility → groups

Groups vs. collections vs. swarms

Based on Pearson (2011) and Henderson (2017)

property	groups	collections	swarms
plural pseudopartitives	yes	yes	yes
plural agreement in BE/CE	yes	no	no?
count Det heading partitives	yes	no	no?
ILPs and <i>always</i>	yes*	no	no?
only large constituent pluralities	no	yes?	yes
spatial existence entailments	no	yes?	yes
support spatial predicates	no	yes?	yes
can expose a plurality	yes	no?	mixed*

? our judgments

* unclear/dubious data

Plural pseudopartitives

Standard syntactic test (Barker 1992):

- ▶ group noun + *of*-phrase with a plural complement → ✓
- ▶ group noun + *of*-phrase with a singular complement → *

- (2)
- a. group of children/ * child
 - b. collection of shirts/ * shirt
 - c. set of chairs/ * chair
 - d. pair of shoes/ * shoe
 - e. herd of animals/ * animal

Problem:

- ▶ expressions referring to game (Ritchie 2013)

- (3) a. pride of lion
 b. flock of pheasant

However:

- ▶ English nouns referring to game can have a zero plural (Corbett 2000: 68, Acquaviva 2008: 30)

- (4) The elephant are downwind of us. (Allan 1976)

Nevertheless, the test is flawed anyway:

- ▶ incorrect predictions wrt object (fake/neat) mass nouns

- (5)
- a. group of offspring
 - b. collection of clothing
 - c. set of furniture
 - d. pair of footwear
 - e. herd of livestock

Hypothesis:

- ▶ in pseudopartitive constructions group nouns require nominals denoting pluralities
- ▶ → singular nouns do not refer to pluralities

Plural agreement and count Det heads

Possible with groups in BE/CE (Pearson 2011):

- (6) a. The committee has been arguing all morning.
b. The committee have been arguing all morning.
- (7) a. The committee is old. → ambiguous
b. The committee are old. → only distributive
- (8) a. Three of the committee came to the meeting.
b. Several of the family objected to her marriage.
c. Many of the present cabinet will have to resign.

Impossible with collections:

- (9)
 - a. The deck of cards is on the table.
 - b. *The deck of cards are on the table.

- (10)
 - a. *Three of the bunch of flowers had died.
 - b. *Several of the deck of cards had gone missing.
 - c. *Many of the pile of dishes needed to be washed.

Absolutely impossible in Slavic:

- (11) a. Komitet **kłócił** się przez całe
committee argued.sg refl through whole
rano.
morning
'The committee has been arguing all morning.'
- b. *Komitet **kłócili** się przez całe
committee argued.pl refl through whole
rano.
morning
Intended: 'The committee have been arguing all
morning.'
- (12) *Trzech spośród komitetu przyszło na spotkanie.
three among committee came.sg on meeting
Intended: 'Three of the committee came to the
meeting.'

ILPs and *always*

Pearson (2011) → intensional semantics for group nouns

- ▶ individual level predicates modified by *always*

- (13) a. #John always has big feet. → object
b. Elephants always have big feet. → kind
- (14) a. *That bunch of flowers is always tall.
b. The Pearson family always has big feet.

Problem:

- ▶ it seems not all group nouns allow for that

- (15)
- a. ??That group of students always has big feet.
 - b. ??That cast of actors always has big feet.
 - c. ??That cabinet always has big feet.

Hypothesis:

- ▶ some groups involve temporal component → generations of members

Derived collectives in Polish

Different classes:

- ▶ suffix **-ka** → numerals

(16) dwa → dwó**ka**
two → two.coll
'two' → 'group of two'

- ▶ suffix **-stwo** → animate nouns (human)

(17) rycerz → rycer**stwo**
knight → knight.coll
'knight' → 'group of knights'

- ▶ suffix **-ostwo** → animate nouns (social roles)

(18) wuj → wuj**ostwo**
uncle → uncle.coll
'uncle' → 'uncle and his spouse'

- ▶ suffix **-ina** → inanimate nouns (trees)

(19) brzoza → brzez**ina**
birch → birch.coll
'birch' → 'brich wood'

- ▶ suffix **-e** → inanimate nouns

(20) kwiat → kwiecie
flower → flower.coll
'flower' → 'mass of flowers'

- ▶ there are more: *-eria*, *-ela*, *-ba*, *-ota* etc.
- ▶ but they seem to pattern with *-stwo*

property	-ka	-stwo	-ostwo	-ina	-e
derived from	Numeral	+ANIM N	+ANIM N	-ANIM N	-ANIM N
count	yes	no	no	yes	no
cumulative reference	no	yes	yes	mixed	yes
pseudopartitives	yes	no	no	no	no
large const. pluralities	no	yes	no	yes	yes
spatial existence ent.	no	no	no	yes	yes
spatial predicates	no	no	no	yes	no

Count/mass

Pluralization:

- (21)
- a. dwójka → dwójki
two.coll.sg → two.coll.pl
 - b. rycerstwo → *rycerstwa
knight.col.sg → knight.coll.pl
 - c. wujostwo → *wujostwa
uncle.coll.sg → uncle.coll.pl
 - d. brzezina → brzeziny
birch.coll.sg → birch.coll.pl
 - e. kwiecie → *kwiecia
flower.coll.sg → flower.coll.pl

Numerals:

- (22)
- a. dwie dwójki
two two.coll.pl
'two groups of two'
 - b. *dwa rycerstwa
two knight.coll.pl
 - c. *dwa wujostwa
two uncle.coll.pl
 - d. dwie brzeziny
two birch.coll.pl
'two birch groves'
 - e. *dwa kwiecie
two flower.coll.pl

Cumulative reference

- (23)
- a. $dwójka \oplus dwójka \neq dwójka$ ('two.coll')
 - b. $rycerstwo \oplus rycerstwo = rycerstwo$ ('knight.coll')
 - c. $wujostwo \oplus wujostwo = wujostwo$ ('uncle.coll')
 - d. $brzezina \oplus brzezina \neq brzezina$ ('birch.coll') if not connected
 - e. $kwiat \oplus kwiecie = kwiecie$ ('flower.coll')

Pseudopartitive constructions

The nominal root specifies constituents:

- (24)
- a. dwójka chłopców
two.coll boys.gen
'group of two boys'
 - b. *rycerstwo jeźdźców
knight.coll horsemen.gen
 - c. *wujostwo Austriaków
uncle.coll Austrians.gen
 - d. *brzezina młodych drzew
birch.coll young trees.gen
 - e. *kwiecie niezpominajek
flower.coll forget-me-nots.gen

Size of constituent pluralities

- (25)
- a. *dwójka* ('two.coll') → cardinality = 2 (numeral root → value)
 - b. *rycerstwo* ('knight.coll') → large cardinality
 - c. *wujostwo* ('uncle.coll') → cardinality = 2 (prototypically)
 - d. *brzezina* ('birch.coll') → large cardinality
 - e. *kwiecie* ('flower.coll') → large cardinality

Spatial existence entailments

If a group is dissolved, it ceases to exist (Henderson 2017):

- ▶ groups survive spatial separation
- ▶ swarms do not

- (26)
- dwójka* ('two.coll') → if separated ✓
 - rycerstwo* ('knight.coll') → if separated ✓
 - wujostwo* ('uncle.coll') → if separated ✓
 - brzezina* ('birch.coll') → if separated ×
 - kwiecie* ('flower.coll') → if separated ×

Spatial predicates

- (27) Context: particular individuals are arranged in such a way to form a circle.
- a. #Ta dziesiątka jest okrągła.
this ten.coll is circular
 - b. #To rycerstwo jest okrągłe.
this knight.coll is circular
 - c. #To wujostwo jest okrągłe.
this uncle.coll is circular
 - d. Ta brzezina jest okrągła.
this birch.coll is circular
'This birch grove is circular.'
 - e. #To kwiecie jest okrągłe.
this flower.coll is circular

Different and same

- ▶ interaction with derived collectives
- ▶ intro on DS:

1. can be anaphoric to a referent introduced in previous discourse – (28)

- (28) Yesterday I bought a ticket for Kasabian in Vienna.
- a. Today, Peter bought the same ticket.
 - b. Today, Peter bought a different ticket.

2. bound within a clause and express covariation (lack of covariation)

- (29) a. Each student bought the same ticket.
b. Each student bought a different ticket.

- ▶ DS: anaphoric, *different* expresses covariation of tickets with students
- ▶ *same* – no covariation
- ▶ Carlson term: sentence internal

Types of plural antecedents for DS

- ▶ already Carlson (1987) noticed dependence of DS acceptability on type of their plural antecedents:

- (30)
- All the men are from different towns/?? a different town.
 - Each man is from a different town/?? different towns.
 - All the men are/each man is from the same town.

Cross-linguistic studies on DS:

- ▶ Beck (2000), Tovená and van Peteghem 2002, Matushansky 2008, Brasoveanu 2008
- ▶ Beck' (2000) data for German: sg. and pl. *diferent* in English corresponds to two lexical items in German: *verschieden* and *andere*

- (31)
- a. Detmar und Kordula wohnen in
Detmar and Kordula live in
verschiedenen Städten.
different cities
- b. Jedes Mädchen hat ein anderes Buch gelesen.
every girl has a different book read

Strategies for DS items:

- ▶ Brasoveanu (2008): 11 languages study on DS lexical items
1. sentence internal reading under distributive quantifiers (plus discourse-anaphoric reading): *andere*, sg. *different*
 2. only discourse-anaphoric reading: English *other/another*
 3. sentence-internal reading with non-distributive quantifiers: plural DP: *verschidenen NP_{PL}*, *different books*

Dotlačil (2012): experimental confirmation of Brasoveanu's claims – for Dutch

- ▶ plus: strategy 3 acceptable with singular NP too:

- (32)
- a. De steden in het noorden hebben een
the towns in the north have a
verschillende lengte-eenheid.
verschillend length-unit
 - b. Jan, Kees en Wim hebben een verschillend
Jan, Kees and Wim have a verschillend
schilderij gekozen.
picture chosen

Czech DS:

1. strategy 1 (distributive): *jiný*
2. strategy 2 (only discourse-anaphoric): ??? (*ostatní?*)
3. strategy 3 (non-distributive quantifiers): *různý* both in sg. and pl.

► introspection data:

(33) a. Každý chlapec/???ti chlapci měl(i) jiné
every boy/the boys had different
kolo.
bike

b.???Každý chlapec/ti chlapci měl(i) různé(á)
every body/the boys had different
kolo(a).
bike

plus Czech *same* which doesn't distinguish between distributive and non-distributive antecedents

- ▶ general pattern for *same* cross-linguistically

(34) Každý chlapec/ti chlapci měl(i) stejné kolo.
every boy/the boys had same bike

Dotlačil (2012) formalization of the difference between $different_{SG}$ and $different_{PL}$:

- (35)
- a. $\llbracket different_{PL} \rrbracket = \lambda P \lambda x. \#(x) \geq 2 (\forall y, z < x) [y, z \in AT \wedge y \neq z \rightarrow distinct(y, z)]$
 - b. $\llbracket different_{SG} \rrbracket = \lambda P \lambda x. Px \wedge \neg x \circ y$
 - c. $\llbracket same \rrbracket = \lambda P \lambda x. Px \wedge x = y$

- ▶ the observed dependence of sentence-internal reading for $different_{SG}$: distributivity not part of *different* semantics
- ▶ $different_{PL}$ degraded with distributive antecedents ... too much distributivity in the sentence similar to:

(36) ??? Each boy will each buy a ticket.

Czech reciprocals: the same strategies

1. R-reciprocals

- ▶ reciprocals in Czech (introspection mostly)
- ▶ R approach, does have distributivity built-in, with pure distributive quantifiers the reciprocity is lost

- (37) a. Petr a Marie **se** pozdravili.
Petr and Mary SE greeted (reciprocal ok)
- b. Petr a Marie pozdravili **jeden druhého**.
Petr and Mary greeted each other (reciprocal ok)
- (38) a. Každý policista **se** podezírá.
every policeman SE suspect (only reflexive)
- b.??? Každý policista podezírá **jeden druhého**.
every policeman suspect each other

- ▶ R-reciprocals allow all types of reciprocity:

- (39)
- a. Petr, Marie a Karel **se** znají.
Petr, Marie and Karel SE know (strong recipr.)
 - b. Petr, Marie a Karel bydlí 1 km od **sebe**.
Petr, Marie and Karel live 1 km from SE (weak)
 - c. Petr, Marie a Karel leželi na **sobě**.
Petr, Marie and Karel lied on SE (weakest)

▶ R-type/*different*_{PL}: *různý*

- (40) a. Ti žáci na to mají **různý** názor.
the students on that have different opinion
- b.???Každý žák na to má **různý** názor.
every student on that has different opinion

2. DA approach (do not have distributivity built-in) – distributive quantifiers help

(41) Každý policista podezírá **ostatní** policisty.
every policeman suspects other policemen

- ▶ DA-reciprocals allow only the strongest reciprocity:

(42) a. Studenti, Petr, Marie a Karel znají ty **ostatní** studenty.
Students, Petr, Marie and Karel know the other students (recipr.)

b. Studenti, Petr, Marie a Karel bydlí 1 km od **ostatních** studentů.
Students, Petr, Marie and Karel live 1 km from other students (non-recipr.)

c. Petr, Marie a Karel leželi na **ostatních** studentech.
Petr, Marie and Karel lied on other students (non-recipr.)

- ▶ the same pattern for A-different: like DA-reciprocals are ok with distributive quantifiers but their reciprocal reading degrades with non-distributive NPs:

- (43) a. Každý žák přečetl **jinou** knihu.
every student read other book (recipr. ok)
- b. ??Ti žáci přečetli **jinou** knihu.
the students read other book (only non-recipr.)

- ▶ *same* is acceptable both with collective and distributive antecedents:

- (44)
- a. Každý policista měl **stejnou** zbraň.
every policeman had same gun
 - b. Ti policisté měli **stejnou** zbraň.
the policemen had same gun

Derived mass nouns

Derived mass nouns derived by the suffix *-í*: *list-í* 'foliage', *dřív-í* 'firewood'

Properties:

1. they are derived from -ANIM nouns
2. only singular: *s list-í-m_{INST.SG}* vs. **s list-í-m_{INST.PL}*
3. not countable with cardinal numerals: **2 list-í*, **2 dřív-í* and don't allow switch to count (unlike underived mass nouns: *2 vody*, ...)

But they can be counted with kind and sum numerals:
dvoj-í dříví, *dvoj-e listí*

4. the incompatibility with numerals comes from the suffix/construction, not from the root: *2 list-y* vs. **2 list-í*

5. compatible with the singular universal quantifier *všechno* 'all': *všechno list-í, všechno dřív-í*
6. obligatorily cumulative: $list-í + list-í = list-í$
7. obligatorily non-divisive (like plurals – the divisivity ends at one unit): parts of *list-í* are *list-í* but not parts of *list*
8. topology plays a role: *listí* is plurality of connected objects, ... Grimm & Dočekal (2017)

Derived collective numerals

- ▶ group nouns/numerals derived from cardinal numerals with the suffix *-ice*: *tr-oj-ice námořníků* 'group-of-three sailors'
- ▶ properties:
 1. both singular and plural: *s troj-icí_{INST.SG} námořníků*, *s troj-ice-mi_{INST.PL} námořníků*
 2. incompatible with the singular universal quantifier *všechno* 'all': **všechna troj-ice námořníků*
 3. obligatorily non-cumulative: *troj-ice + troj-ice = 2 troj-ice*
 4. obligatorily non-divisive: parts of *troj-ice* are not *troj-ice*

5. can be counted with cardinal numerals: *dvě troj-ice námořníků*
6. can modify mostly +ANIM nouns (?metaphorical usages: *troj-ice úkolů* 'group-of-three tasks', ...)
7. topology is not involved: *troj-ice detektivů se rozjela do tří měst* 'group-of-three detectives departed into three towns',
...

Derived collective/kind nouns

- ▶ collective nouns derived from nouns of mostly professions with the suffix *-stvo*: *rytíř-stvo* 'knights/chivalry', *duchovenstvo* 'clergy'
- ▶ properties:
 1. only singular: *duchovenstvo*, **duchovenstva*
 2. compatible with the singular universal quantifier *všechno* 'all': *všechno rytířstvo*
 3. cumulative + divisive: *rytířstvo* + *rytířstvo* = *rytířstvo*, parts of *rytířstvo* are still *rytířstvo* up to atomic knights?
 4. countable to some extent with kind-level numerals: *dvojí duchovenstvo*
 5. mostly +HUMAN but some exceptions: *lodstvo* 'marine/navy'

6. not topology but some sorts of institutionalization
7. somewhere between collective and kind:
 - ▶ ok with collective predicates like *gather* but un-countable with cardinal numerals
 - ▶ ok with kind-level predicates like *become extinct* but regular kinds (*bear, . . .*) are more spatially dispersed

The experiment

Ways to design the experiment:

1. test *same* (introspection):

- (45)
- a. ?Duchovenstvo mělo stejné čepice.
Clergy had same hats.
 - b. Duchovní měli stejné čepice.
Clergymen had same hats.
 - c. Každý duchovní měl stejnou čepici.
Every clergy had same hat.

2. Test *different*_{SG} (introspection):

- (46) a.???Duchovenstvo mělo jinou čepici.
Clergy had different hat.
- b.???Duchovní měli jinou čepici.
Clergymen had different hat.
- c. Každý duchovní měl jinou čepici.
Every clergy had different hat.

3. Test *different_{PL}* (introspection):

- (47)
- a. ?Duchovenstvo mělo různé čepice.
Clergy had different hats.
 - b. ?Duchovní měli různé čepice.
Clergymen had different hats.
 - c.???Každý duchovní měl různou čepici.
Every clergy had different hat.

- ▶ we have chosen the strategy 2

(48) Hypothesis: collective nouns are decomposable to the same extent as bare NPs.

- ▶ the design: three groups of items
- ▶ context always set to covariation scenario
- ▶ each group has 9 items in three conditions
- ▶ 27 items in sum, plus 27 fillers
- ▶ IBEX: randomization of conditions, reaction times, . . .
- ▶ latin square design
- ▶ each group represents one sub-type: derived mass nouns, collective numerals, derived collective/kind nouns

Derived collective/kind nouns

(49) Kontext: Petr pozoroval poselstvo rytířů shromážděné před hradem. Všiml si, že ani jeden rytíř nemá stejného brnění jako ostatní. A řekl:

Context: Petr was observing messenger_{STVO} of knights gathered in front of a castle. He noticed that no knight has the same armour as others. And he said:

- a. Poselstvo má jiné brnění.
Messenger_{STVO} has different armour.
- b. Poslové mají jiné brnění.
Messengers_{PL} have different armour.
- c. Každý posel má jiné brnění.
Every messenger has different armour.

- ▶ conditions in each item:
 1. the target: derived collective/kind, derived mass, derived coll. numeral
 2. bare NP plural version of a)
 3. universal quantified distributive quantifier + bare NP in singular

- ▶ expectations: c) should be reference level – nearly totally acceptable
- ▶ bare nouns and collective nouns should be statistically significantly worse than distributive quantifier
- ▶ real questions:
 1. difference between a) and b)
 2. difference between groups of items

Derived collective numerals

- (50) Kontext: Petr pozoroval skupinu tří námořníků a všiml si, že všichni mají odlišné oblečení. A řekl:
Context: Peter was observing a group of three sailors and he noticed that all of them have different clothes. And he said:
- Trojice námořníků má jiné oblečení.
Group-of-three sailors has different clothes.
 - Námořníci mají jiné oblečení.
Sailors have different clothes.
 - Každý námořník má jiné oblečení.
Every sailor has different clothes.

Derived mass nouns

(51) Kontext: Petr pozoroval vzory cihloví na jedné vile a všiml si, že ani jedna cihla neměla stejnou barvu jako ostatní. A řekl:

Context: Petr looked at patterns of brick_i on a villa and he noticed that no brick has the same color as others. And he said:

- a. Cihloví má jinou barvu.
Brick_i has different color.
- b. Cihly mají jinou barvu.
Bricks have different color.
- c. Každá cihla má jinou barvu.
Every brick has different color.