



FACULTY
OF ARTS

Masaryk University

Decomposing groups, bunches, and aggregates

16.11.2017, Leiden University, LUSH

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Introduction

Collective nouns

Collective nouns (Jespersen 1924):

- (1)
 - a. committee
 - b. group
 - c. deck

- group nouns (Barker 1992) or bunch nouns (Schwarzschild 1996)
- involve not only individuals, but also events and degrees

- (2)
 - a. group of objects
 - b. sequence of events
 - c. range of numbers

Collective nouns

Heterogeneous semantic nature: singular or plural?

- plural denotation (Munn 1998, Elbourne 1999)
- atomic denotation (Baker 1992, Schwarzschild 1996)
- group-formation (Landman 1989, 2000)

Standard assumption:

- collective nouns \Rightarrow uniform category

Collective nouns

Recent findings: distinct classes

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

Landman (2000):

- collective body formation \Rightarrow swarms
- collective action \Rightarrow groups/swarms
- collective responsibility \Rightarrow groups

Outline

Outline of the talk

1. distinct classes of collective nouns
2. derived collectives in Czech and Polish
3. experiment on 3 classes of derived collectives

Groups, collections, swarms

Based on Pearson (2011) and Henderson (2017):

property	groups	collections	swarms
plural pseudopartitives	✓	✓	✓
plural agreement in BE/CE	✓	×	× *
count Det heading partitives	✓	×	× *
ILPs and <i>always</i>	✓?	×	× *
only large constituent pluralities	×	✓ *	✓
spatial existence entailments	×	✓ *	✓
support spatial predicates	×	✓ *	✓

* our judgments

? unclear/dubious data

Plural pseudopartitives

Standard syntactic test (Barker 1992):

- group noun + *of*-phrase with a plural complement $\Rightarrow \checkmark$
- group noun + *of*-phrase with a singular complement $\Rightarrow *$

- (3)
- 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

Plural pseudopartitives

Problem:

- expressions referring to game (Ritchie 2013)

- (4) 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)

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

Plural pseudopartitives

Nevertheless, the test is flawed anyway:

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

- (6)
- 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
- \Rightarrow regular singular count nouns do not refer to pluralities

Plural agreement and count Det heads

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

- (7) a. The committee has been arguing all morning.
b. The committee have been arguing all morning.

- (8) a. The committee is old. ⇒ ambiguous
b. The committee are old. ⇒ only distributive

- (9) 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.

Plural agreement and count Det heads

Impossible with collections:

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

- (11) 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.

Plural agreement and count Det heads

Absolutely impossible in Slavic:

- (12) a. Komitet **kłócił** się przez całe rano.
committee argued_{sg} refl through whole morning
'The committee has been arguing all morning.'
- b. *Komitet **kłócili** się przez całe rano.
committee argued_{pl} refl through whole morning
Intended: 'The committee have been arguing all morning.'
- (13) *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) \Rightarrow intensional semantics for group nouns

- individual level predicates modified by *always*

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

ILPs and *always*

Problem:

- it seems not all group nouns allow for that

- (16)
- ??That group of students always has big feet.
 - ??That cast of actors always has big feet.
 - ??That cabinet always has big feet.

Hypothesis:

- some groups involve temporal component \Rightarrow generations of members

Derived collectives in Czech and Polish

Different classes

- suffix **-ice/-ka** ⇒ numerals

(17) dva/dwa ⇒ dvoj**ice**/dwój**ka**

two ⇒ two_{coll}

'two' ⇒ 'group of two'

- suffix **-stvo/-stwo** ⇒ animate nouns (human)

(18) rytíř/rycerz ⇒ rytíř**stvo**/rycer**stwo**

knight ⇒ knight_{coll}

'knight' ⇒ 'group/totality of knights'

Different classes

- suffix **-í/-e** ⇒ inanimate nouns

(19) květ/kwiat ⇒ kvítí/kwiecie

flower ⇒ flower_{coll}

'flower' ⇒ 'mass of flowers'

- there are more: *-ž, -ina, -eria, -ela, -ba, -ota* etc

Aggregates

Derived mass nouns \Rightarrow the suffix *-í/-e*

- (20) a. Czech: *list-í* 'foliage', *dřív-í* 'firewood'
b. Polish: *pierz-e* 'feather stuffing', *włosi-e* 'bristle'

- derived from *-ANIM* nouns
- no plural forms

- (21) a. s *list-í-m*_{instr.sg}
b. *s *list-í-mi*_{instr.pl}

Aggregates

- incompatible with cardinal numerals: *2 list-í, *2 dřív-í
 - compatible with taxonomic and aggregate numerals

- (22)
- a. *2 list-í/dřív-í
 - b. dvoj-í dříví
 - c. dvoj-e listí

- compatible with the singular universal quantifier všechno 'all'

- (23) všechno list-í/dřív-í

Aggregates

- obligatorily cumulative: $list-í \oplus list-í = list-í$
- obligatorily divisive: parts of $list-í$ are $list-í$ (unlike $list$)
- topology plays a role
 - particular leaves get separated $\Rightarrow list-í$ ceases to exist
 - $listí \Rightarrow$ cluster = plurality of connected objects (Grimm & Dočekal 2017)

Bunches

Group nouns derived from cardinal numerals \Rightarrow the suffix *-ice/-ka*

- (24) a. Czech: *tr-oj-ice námořníků* 'group-of-three sailors'
b. Polish: *tr-ój-ka marynarzy* 'group-of-three sailors'

- count +ANIM nouns
 - metaphorical use: *troj-ice úkolů* 'group-of-three tasks')
- both singular and plural forms

- (25) a. s *troj-icí_{instr.sg}* námořníků
b. s *troj-ice-mi_{instr.pl}* námořníků

Bunches

- compatible with cardinal numerals

(26) 2 troj-ice námořníků

- incompatible with the singular universal quantifier *všechno* 'all'

(27) *všechna troj-ice námořníků

Bunches

- obligatorily non-cumulative: *troj-ice* \oplus *troj-ice* = 2 *troj-ice*
- obligatorily non-divisive: parts of *troj-ice* are not *troj-ice*
- topology is not involved
 - constituents get separated ✓

(28) Trojice detektivů se rozjela do tří různých měst.
three_{coll} detectives refl dispersed to three different towns
'A group of three detectives dispersed to three different towns.'

Groups

Derived from role nouns (professions) \Rightarrow the suffix *-stvo/-stwo*

- (29) a. Czech: *rytíř-stvo* ‘knights/chivalry’, *duchovenstvo* ‘clergy’
b. Polish: *rycer-stwo* ‘knights/chivalry’, *duchowieństwo* ‘clergy’

- mostly +ANIM (human)
 - exception: *lodźstwo* ‘marine/navy’
- only singular forms

- (30) a. *duchovenstvo*_{nom.sg}
b. **duchovenstva*_{nom.pl}

Groups

- incompatible with cardinal numerals
 - compatible with taxonomic numerals

- (31) a. *2 duchovenstva
b. dvojí duchovenstvo

- compatible with the singular universal quantifier *všechno* 'all'

- (32) všechno rytířstvo

Groups

- cumulative: $\text{rytířstvo} \oplus \text{rytířstvo} = \text{rytířstvo}$
- divisive to a threshold: parts of *rytířstvo* are still *rytířstvo* up to atomic knights?
- topology is not involved
 - constituents get separated ✓

(33) Rytířstvo se rozjelo do tří různých měst.
knight_{coll} refl dispersed to three different towns
'A group of knights dispersed to three different towns.'

Groups

- no topological commitments but some sort of institutionalization
- somewhere between collectives and object mass nouns
 - * with cardinal numerals
 - ✓ with collective predicates like *gather*

(34) Rytířstvo se shromáždilo před hradem.
knight_{coll} refl gather before castle
'(A group/totality of) Knights gathered in front o the castle.'

Groups

- somewhere between collectives and kind terms
 - ✓ with kind-level predicates like *be widespread*
 - regular kinds, e.g., *bear*, are more spatially dispersed

(35) Rytířstvo bylo rozšířené ve středověku.
knight_{coll} was widespread in middle-ages
'(A group/totality of) Knights were widespread in the Middle Ages.'

Data summary

property	BUNCH	GROUP	AGGREGATE
derived from / modifies	+ANIM N	+ANIM N	-ANIM N
count	✓	×	×
pseudopartitives	✓	×	×
cumulative reference	×	✓	✓
large const. plurality	×	✓	✓
generic predicates	×	✓	×
spatial existence ent.	×	×	✓

Another test

- more apt for experimental investigation
- builds on the known interaction between collectives and reciprocal predicates
- reciprocity requires a plural argument \Rightarrow form of quantification (Schwarzschild 1996, Lønning 2011)

Another test

- contradictory evidence but sometimes possible with plural VP agreement (Pearson 2011)

- (36)
- *The cricket team usually coaches each other.
 - The family can't stand each other.
 - It is puzzling when medical staff disagree with each other.

Different and same (DS)

- subcase/close to reciprocity
- anaphoric to a referent introduced in the previous discourse

- (37) Yesterday I bought Plant's last CD.
- a. Today, Peter bought the same CD.
 - b. Today, Peter bought a different CD.

Different and same (DS)

- bound within a clause
- sentence internal reading (Carlson 1987)
 - expresses covariation
 - the contrast between *different* and *same*

- (38) a. Each student bought the same CD. \Rightarrow no covariation
b. Each student bought a different CD. \Rightarrow covariation

Types of DS antecedents

- acceptability of DS depends on the type of their antecedents (Carlson 1987)
 - distributive vs. non-distributive antecedents
 - contrast between singular and plural *different*
 - no contrast with *same*

- (39)
- 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.

DS strategies

Cross-linguistic investigations on DS:

- Beck (2000): sg and pl *different* in English \Rightarrow two distinct lexical items in German: *verschieden/ander*

- (40)
- a. Detmar und Kordula wohnen in **verschiedenen**
Detmar and Kordula live in different
Städten.
cities
 - b. Jedes Mädchen hat ein **anderes** Buch gelesen.
every girl has a different book read

DS strategies

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

DS strategies

- Dotlačil (2012: ch. 5): experimental confirmation of Brasoveanu's claims
 - Dutch data: experimental evidence
 - Czech data: introspection and observation

DS strategies

- Czech DS

1. strategy 1 (distributive): *jiný* 'different_{sg}'
2. strategy 2 (only discourse-anaphoric): *ostatní* 'other'
3. strategy 3 (non-distributive quantifiers): *různý* both in sg. and pl.
(English 'different_{pl}')

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

DS strategies

- Czech *stejný* 'same' does not distinguish between distributive and non-distributive antecedents
 - follows the general cross-linguistic pattern for *same*

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

Formal treatment of DS

Dotlačil (2012):

- *different_{sg}* vs. *different_{pl}*

- (43) a. $\llbracket \text{different}_{pl} \rrbracket = \lambda P \lambda x. \#(x) \geq 2 (\forall y, z < x) [y, z \in AT \wedge y \neq z \rightarrow \text{distinct}(y, z)]$
- b. $\llbracket \text{different}_{sg} \rrbracket = \lambda P \lambda x. Px \wedge \neg x \circ y$
- c. $\llbracket \text{same} \rrbracket = \lambda P \lambda x. Px \wedge x = y$

Formal treatment of DS

- the observed dependence of sentence-internal reading for different_{sg}
 - distributivity not part of the semantics of *different*
- different_{pl} degraded with distributive antecedents
- excessive distributivity

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

Parallel between DS and reciprocals

- reciprocals preferring distributive antecedents
- reciprocals preferring collective antecedents
 - built-in distributivity
 - pure distributive quantifiers \Rightarrow reciprocity lost or ungrammatical

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

- (46) a. Petr a Marie **se/jeden druhého** pozdravili.
Petr and Mary refl/each-other greeted
reciprocal reading $\Rightarrow \checkmark$
- b. Každý policista **se/*jeden druhého** podezírá.
every policeman refl/each-other suspects
reciprocal reading $\Rightarrow *$, only reflexive reading

The experiment

Data

Reminder: 3 classes of derived collectives in Czech and Polish:

- **GROUP** nouns
 - *rytíř_{CZ} / rycerz_{PL}* ('knight') \Rightarrow *rytířstvo_{CZ} / rycerstwo_{PL}*
(‘group/totality of knights’)
- **BUNCH** numerals
 - *tři_{CZ} / trzy_{PL}* ('three') \Rightarrow *trojice_{CZ} / trójka_{PL}* ('group of three')
- **AGGREGATE** nouns
 - *list_{CZ} / liść_{PL}* ('leaf') \Rightarrow *listí_{CZ} / listowie_{PL}* ('foliage')

Motivation

- the essential questions:
 - to what extent (if any) one can access atomic members of a group plurality to distribute a certain property?
 - to what extent (if any) different modes of group-formation relate to decomposability of particular collective nouns?
- interaction between collectives and so-called *A-different* expressions
 - Czech: *jiny* ('different')
 - Polish: *inny* ('different')

Motivation

- without a distributive universal quantifier in subject position \Rightarrow only discourse anaphoric reading (Beck 2000, Dotlačil 2010)

- (47) a. Každý muž pil jinou whisky. \Rightarrow covariation
'Every man drank different whiskey.'
- b. Ti muži pili jinou whisky. \Rightarrow no covariation 'The men drank different whiskey.'

Design

- parallel experiments on Czech and Polish
- Latin Square design, 9 items in each of the 3 classes (conditions)
⇒ 27 items plus 27 fillers
- the participants judged sentences in a context supporting a strong co-varying scenario
- truth value judgment task
- 5-point Likert scale: 1=worst, 5=best

Design

- 3 conditions:
 1. **COL**: the target involved GROUP, BUNCH, or AGGREGATE
 2. **BP**: a bare plural NP
 3. **QUA**: a universal distributive quantifier with a singular bare NP
- reference level: QUA

Items

(48) **Context:** All the knights of the kingdom gathered to fight the final battle against the musketeers. A historian who observed the battlefield realized that none of the knights has the same armor as the others. He recorded the fact in a chronicle:

- a. Rytířstvo má jinou zbroj.
knight_{coll} has different armor
'(A group/totality of) Knights have different armor.'

COL

- b. Rytíři mají jinou zbroj.
knights have different armor
'Knights have different armor.'

BP

- c. Každý rytíř má jinou zbroj.
every knight has different armor

Items

(49) **Context:** In spring Tomek and Kasia went to the meadow to watch blooming flowers. At a certain moment Tomek noticed that in the whole meadow there no two flowers of the same color. He was very surprised and uttered to Kasia:

- a. Kwiecie ma inny kolor.
flower_{coll} has different color

‘(A mass of) flowers are of a different color.’

COL

- b. Kwiaty mają inny kolor.
flowers have different color

‘Flowers are of a different color.’

BP

- c. Każdy kwiat ma inny kolor.
every flower has different color

‘Every flower is of a different color.’

QUA

Research questions

- reference level: QUA (nearly total acceptability)
- expectation:
 - COL and BP significantly worse than QUA
- research questions
 1. differences between COL and BP?
 2. differences between GROUP, BUNCH, and AGGREGATE?

Data collection and analysis

- both experiments: run online on Ibex farm
- participants: 51_{CZ} and 48_{pl}
- all were successful with the fillers
- R package ORDINAL: the mixed-effects ordered probit regression
- the model had 1 predictor: QUA
- the subject and item slope + intercept random effects
- results: mean acceptability of the 3 classes \Rightarrow whisker plot

Results

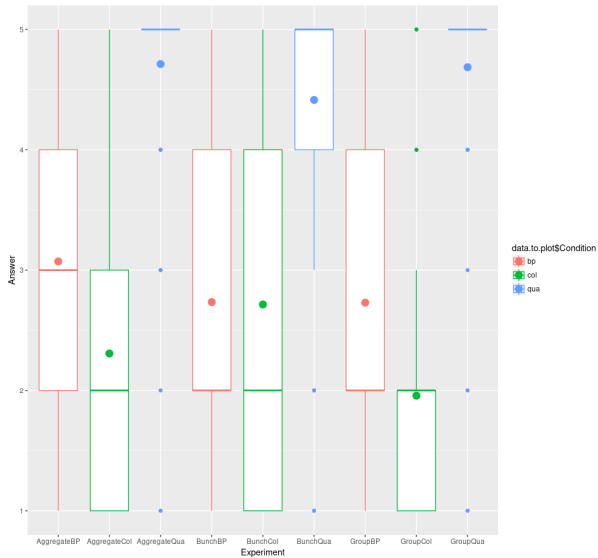


Figure 1: Results: Czech

Results

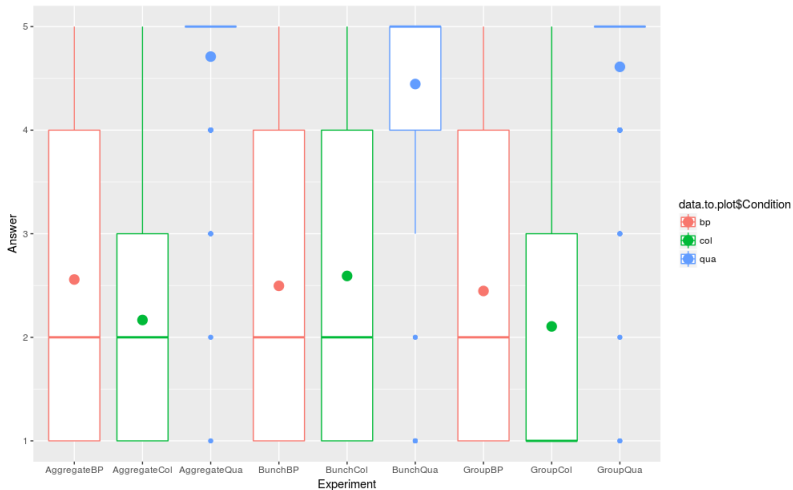


Figure 2: Results: Polish

Results

- the class **BUNCH**
 - **bare plurals**: significantly worse results than quantifiers
 $\beta_{cz} = -1.6289, z_{cz} = -7.626, p_{cz} < 0.001$
 $\beta_{pl} = -1.8408, z_{pl} = -11.56, p_{pl} < 0.001$
 - **collectives**: significantly worse results than quantifiers
 $\beta_{cz} = -1.6819, z_{cz} = -7.783, p_{cz} < 0.001$
 $\beta_{pl} = -1.7601, z_{pl} = -11.03, p_{pl} < 0.001$
 - **no statistical difference** between collectives and bare plurals
 $\beta_{cz} = 0.05298, z_{cz} = 0.267, p_{cz} = 0.789$
 $\beta_{pl} = -0.0807, z_{pl} = -0.578, p_{pl} = 0.563$

Results

- the class **GROUP**
 - **bare plurals**: significantly worse results than quantifiers
 $\beta_{cz} = -2.1113, z_{cz} = -10.70, p_{cz} < 0.001$
 $\beta_{pl} = -2.2537, z_{pl} = -11.15, p_{pl} < 0.001$
 - **collectives**: significantly worse results than quantifiers
 $\beta_{cz} = -2.8955, z_{cz} = -13.56, p_{cz} < 0.001$
 $\beta_{pl} = -2.6726, z_{pl} = -12.45, p_{pl} < 0.001$
 - **collectives**: significantly worse results than bare plurals
 $\beta_{cz} = 0.7842, z_{cz} = 4.831, p_{cz} < 0.001$
 $\beta_{pl} = 0.4189, z_{pl} = 2.486, p_{pl} < 0.05$

Results

- the class **AGGREGATE**
 - **bare plurals**: significantly worse results than quantifiers
 $\beta_{cz} = -1.9916, z_{cz} = -8.166, p_{cz} < 0.001$
 $\beta_{pl} = -2.3726, z_{pl} = -13.58, p_{pl} < 0.001$
 - **collectives**: significantly worse results than quantifiers
 $\beta_{cz} = -2.7251, z_{cz} = -10.731, p_{cz} < 0.001$
 $\beta_{pl} = -2.7958, z_{pl} = -15.02, p_{pl} < 0.001$
 - **collectives**: significantly worse results than bare plurals
 $\beta_{cz} = 0.7335, z_{cz} = 3.45, p_{cz} < 0.001$
 $\beta_{pl} = 0.4232, z_{pl} = 3.054, p_{pl} < 0.01$

Discussion

- almost identical results in both Czech and Polish
 - despite different frequency and productivity rates as well as different derivational potentials of corresponding classes
 - the p_{pl} values tend to be higher than p_{cz}
- **BUNCH**: easier to decompose than **GROUP** and **AGGREGATE** collectives
 - shared collective inferences
 - asymmetry in the accessibility to the members of a denoted plurality

Discussion

- scale of decomposability in West Slavic

(50) GROUP \approx AGGREGATE < BUNCH \approx bare plural NP < distr. QP

- possibility: **GROUP** and **AGGREGATE** are semantically more complex \Rightarrow group-formation involves an additional mode
 - GROUP \Rightarrow kind inferences
 - AGGREGATE \Rightarrow topological relations
- **BUNCH** simply establish a membership relation

Towards explanation

Preliminary account

- very attractive framework of de Vries (2015)
- collective nouns denote sets (et)
 - absence of plural morphology \Rightarrow shifted to impure atoms (e)
- based mostly on experimental data from British English

(51) The class are sleeping or drawing.

- a. coll: $(sleep_{et} \vee draw_{et})(\uparrow (class_{et})_e)$
- b. distr: $(* (sleep_{et} \vee draw_{et})_{et,t})(class_{et})$

(52) The class is sleeping or drawing.

- a. only coll: $\uparrow (class_{et})_e \in sleep \cup draw$
- b. *distr: $class_{et} \in *(sleep \cup draw)$

Preliminary account

- prediction:
 - if reciprocity and distributivity = quantification over atoms (assumed by many) and
 - if the connection between atom denotation and morphological number (V) holds (de Vries 2015)
 - \Rightarrow Czech BPs should be more acceptable as covariational antecedents than collectives (sg agreement)
- empirically correct for AGGREGATE and GROUP
- but not for BUNCH collectives

Preliminary account

- possible explanation: the role of animacy (de Vries 2015 following Pearson 2011)
 - partitives with animate collectives \Rightarrow distribution over atoms
 - no distinction between plurals and collectives: Dutch data

- (53)
- a. Half of the committee had been painted yellow.
 - (i) distr: yellow(half of the members)
 - (ii) *coll/mass: yellow(half of the committee stuff)
 - b. Half of the girls are covered in mud.
 - (i) distr: mud(half of the girls)
 - (ii) *coll/mass: mud(half of the girls stuff)

Preliminary account

- inanimate collectives do not allow for distribution over atoms
 - vague \Rightarrow mass denotation

- (54) a. Half of the pile of exams has been graded.
- (i) coll/mass: graded(half of the exam stuff)
 - (ii) ?(entailed) distr: graded(half of the members)

Preliminary account

- Czech and Polish BUNCH collectives are mostly animate

- (55) a. *trojice mužů* 'group of three men'
b. ??*trojice oblaků* 'group of three clouds'

- animate BUNCH \Rightarrow more decomposable than inanimates
- but what about GROUP nouns? also animate: *rytířstvo* 'chivalry'
- possible account: social roles (Zobel 2016)
 - abstract functions or capacities of individuals (*r*)
 - social constructs independent of the individuals that bear them
 - shifting mechanism relating roles and individuals

Summary and further investigation

- scale of decomposability in West Slavic

(56) GROUP \approx AGGREGATE < BUNCH \approx bare plural NP < distr. QP

- Factor 1: sg agreement
 - sg agreement forces impure atom interpretation of Slavic collectives \Rightarrow not totally acceptable as covariation antecedents
 - to some extent yes \Rightarrow P-distributivity? (meaning postulates)

(57) The team ate a pizza.

- if yes, it would be easy to test \Rightarrow Experiment 2

Summary and further investigation

- Factor 2: animacy
 - animate BUNCH nouns are acceptable as covariation antecedents to the same extent as bare plurals
- again testable \Rightarrow Experiment 2
 - -ANIM bunch nouns: *trojice lodí/úloh/hvězd*

Thanks!

Selected References

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Appendix

Pseudopartitive constructions

The nominal root specifies constituents:

- (58)
- 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 niepominajek
flower.coll forget-me-nots.gen

Size of constituent pluralities

- (59)
- 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

- (60)
- 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

- (61) 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

