

# The DiaL2 project: pipeline, results, news and future work

George Moroz   Olga Gich   Anna Grishanova   Natalia Koshelyuk  
 Chiara Naccarato   Anna Panova   Anastasia Yakovleva  
 Svetlana Zemicheva

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# Precursors

## Precursors of the project



Nina Dobrushina



Michael Daniel

- Multiple sociolinguistic expeditions to Daghestan
- Several dialect expeditions to Ustyia

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- Online corpora available for everyone:
  - [Corpus of Russian spoken in Daghestan](#)
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- Online corpora available for everyone:
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  - [Ustja River Basin Corpus](#)
  - ... and other bilingual and dialect corpora

# Resources of the Linguistic Convergence Laboratory

- <https://lingconlab.ru/>
- 24 dialectal corpora
- 8 bilingual corpora

## Dialectal Corpora

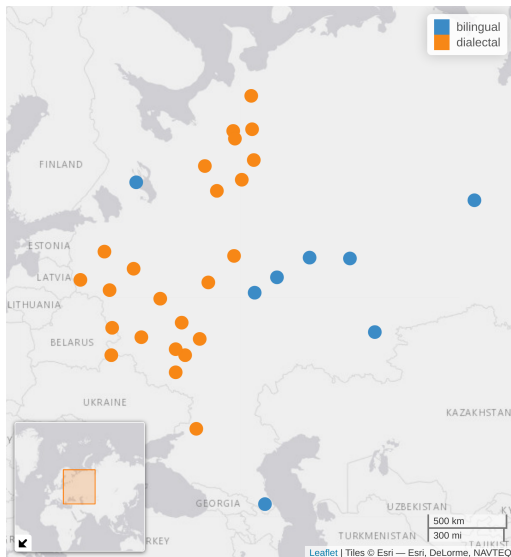
<div>Corpus of the Russian dialect spoken in Khislavichi district</div> <div>260,793 tok.</div> <div>Ustja River Basin Corpus</div> <div>959,782 tok.</div>	<div>Corpus of the Russian dialect spoken in the villages of the Middle Pyoza</div> <div>79,566 tok.</div>	<div>Corpus of Russian spoken in Zvenigorod</div> <div>68,324 tok.</div>	<div>Сvishni and Trostnoe Corpus</div> <div>24,414 tok.</div>
	<div>Corpus of the Russian dialect spoken in Nekhochi</div> <div>88,965 tok.</div>	<div>Luzhnikovo Corpus</div> <div>68,666 tok.</div>	<div>Corpus of the Russian dialect spoken in the Mikhaylov area</div> <div>47,579 tok.</div>
	<div>Corpus of the Russian dialect spoken in the village Veegora</div> <div>91,514 tok.</div>	<div>Corpus of Opochetsky dialects</div> <div>68,741 tok.</div>	<div>Corpus of the Russian dialect spoken in the villages of the Middle Northern Dvina</div> <div>68,010 tok.</div>
	<div>Corpus of the Russian dialect spoken in Manturovo</div> <div>113,837 tok.</div>	<div>Upper Pinega and Vyga Corpus</div> <div>70,803 tok.</div>	<div>Corpus of Spiridonova Buda dialect</div> <div>70,565 tok.</div>
	<div>Corpus of the Russian dialect spoken in the village Malinino</div> <div>138,943 tok.</div>	<div>Corpus of Rogovatska dialect</div> <div>100,047 tok.</div>	<div>Corpus of the Russian dialect spoken in the villages of the Don river</div> <div>69,098 tok.</div>
	<div>Corpus of Lukh and Teza river basins dialects</div> <div>146,350 tok.</div>	<div>Corpus of the Russian dialect spoken in the village Ilmenino</div> <div>134,207 tok.</div>	<div>Corpus of Shetnevo and Makeevo dialect</div> <div>95,335 tok.</div>
	<div>Corpus of the Russian dialect spoken in the village Ilmen Lake district</div> <div>134,207 tok.</div>	<div>Corpus of the Russian dialect spoken in the village Ilmen Lake district</div> <div>134,207 tok.</div>	<div>Corpus of the Russian dialect spoken in the village Ilmen Lake district</div> <div>134,207 tok.</div>
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## Bilingual Corpora

Corpus of Russian spoken in Daghestan 376,717 tok.	Khanty Russian Corpus 40,225 tok.	
	Corpus of Russian spoken in Chuvashia 46,307 tok.	Corpus of Russian spoken by the Roma 41,767 tok.
	Corpus of Russian spoken in Mari El 69,109 tok.	
	Corpus of Russian spoken in Bashkortostan 93,127 tok.	
Corpus of Karelian Russian 578,646 tok.	Corpus of Russian spoken by the Besermans 97,216 tok.	



# Bilingual and Dialectal Corpora



Can we analyze variation of linguistic features  
across all corpora?

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What are the factors that influence variation?

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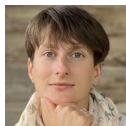
Can we find different variation patterns?

## Previous publications

- Daghestanian Russian [[Daniel et al., 2010](#), [Panova and Philippova, 2021](#)]
- Russian of Erzya speakers [[Shagal, 2016](#)]
- Russian of Kazakh speakers [[Rakhilina and Kazkenova, 2018](#)]
- Contact Russian of Northern Siberia and the Russian Far East [[Stoynova, 2019, 2021](#)]
- Russian of Moksha speakers [[Kashkin, 2020](#)]
- Russian of Hill Mari [[Kashkin, 2022](#)]
- Russian of Nganasan speakers [[Khomchenkova, 2020](#)]
- Dialect of Ustja River Basin [[Daniel et al., 2019](#)]

# DiaL2

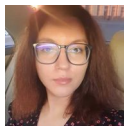
## The DiaL2 team



Maria Ermolova



Anna Grishanova



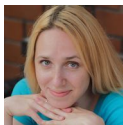
Natalia Koshelyuk



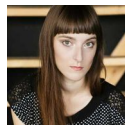
George Moroz



Chiara Naccarato



Anastasia Yakovleva



Svetlana Zemicheva

## The DiaL2 pipeline

- collect all .eaf files
- extract transcriptions using the phonfieldwork R package [[Moroz, 2023](#)]
- use the udpipe package in order to gather morphological and syntactical annotation
- filter the result table for particular feature selected by a researcher
- annotate standardness of the utterances
- remove fully-standard speakers
- model the standardness of the utterances using sociolinguistic and linguistic features as predictors



# Num constructions

# Non-standard numeral constructions in L2 Russian



Chiara Naccarato



George Moroz

## Non-standard numeral constructions in L2 Russian

- Variation in numeral constructions (NCs) in bilingual corpora
  - e.g. dva brat vs. dva brata
- Previous research on other L2 Russian varieties
  - Stoyanova (2021) on Nanai and Ulcha Russian: evidence for pattern borrowing
- Also mentioned by
  - Shagal (2016: 369-370) for Erzya Russian
  - Rakhilina & Kazkenova (2018: 610) for Kazakh Russian

## Research questions

- Does the amount of variation in NCs differ across corpora and/or among speakers of the same variety?
- Can variation in NCs be explained in terms of contact influence?
- Do other factors promote or hinder variation in NCs?

# The database and parameters of data annotation

4,144 observations

(1.1) corpora: 7

(1.2) speakers: 181

(1.3) gender

(1.4) year of birth

(1.5) L1: 21

(1.6) L1 family

(1.7) education

(1.8) standardness of the speaker

(2.1) marking

(2.2) numeral

(2.3) noun token

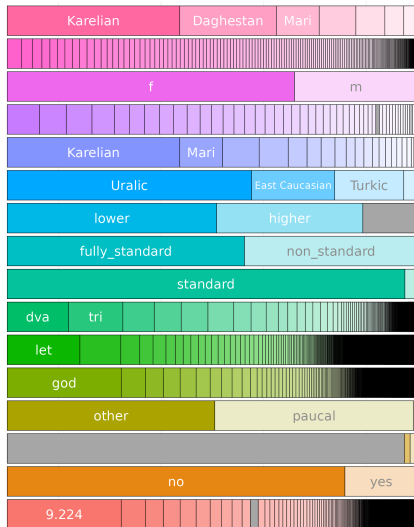
(2.4) noun lemma

(2.5) numeral type

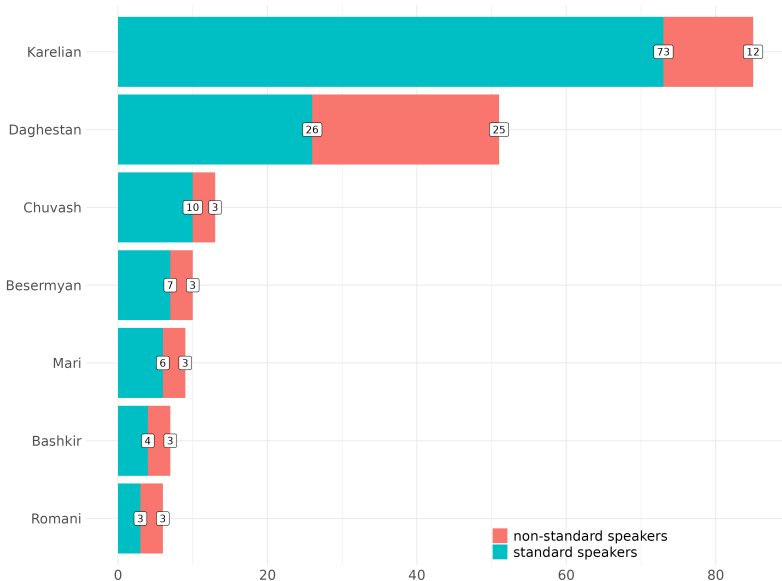
(2.6) noun type

(2.7) ambiguous

(2.8) dice coefficient

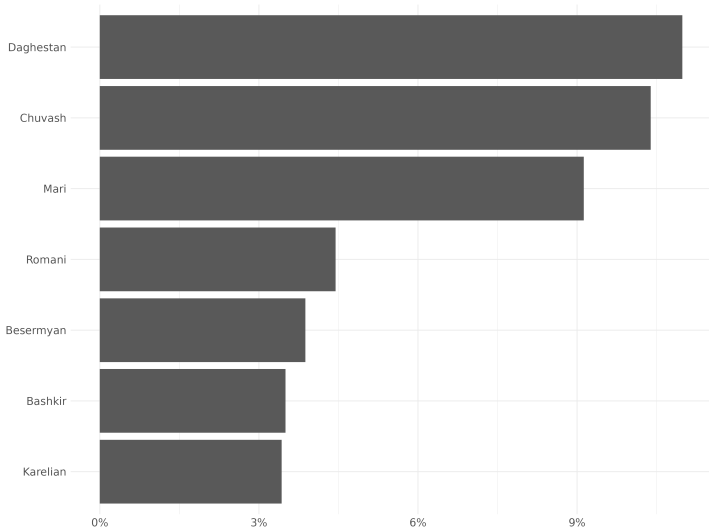


## Fully standard (71.3%) vs. non-standard speakers (28.7%)



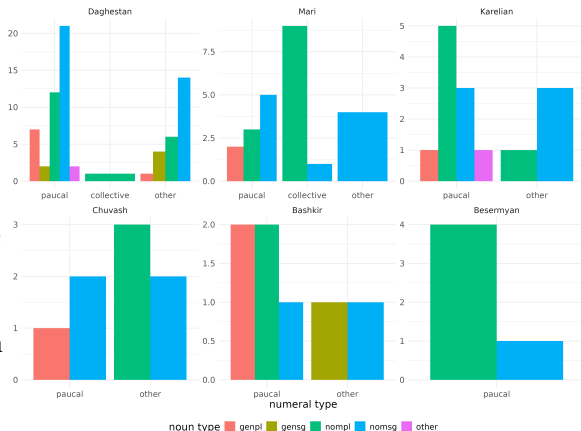
# Proportion of non-standard occurrences per corpus

1,748 observations



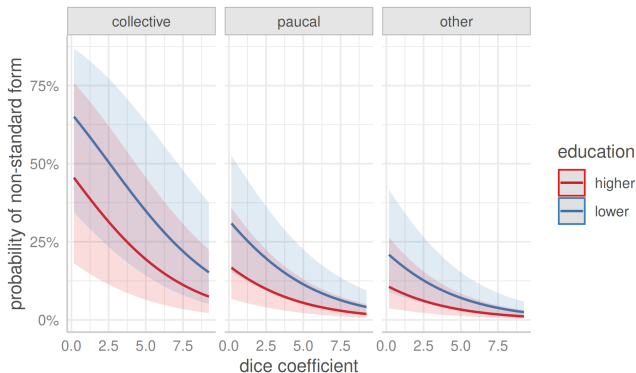
## Distribution of n-std forms with different types of numerals

- NOM instead of GEN is frequent both with paucals and other numerals
- n-std GEN is attested sporadically
- other case forms are even less frequent
- only ~45% of n-std expressions could in principle be explained by L1 pattern borrowing





## Statistical modelling



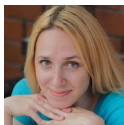
- **Logistic regression:** standardness  $\sim$  Dice coefficient + year of birth + education + numeral type + gender + (1|L1 family/speaker id)
- **Conditional importance of the variables in our model (generalized R squared):** collocationality (Dice coefficient) > education > year of birth > numeral type > gender

## Conclusions

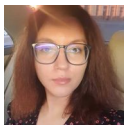
- Variation in NCs is attested in all L2 corpora, but not to the same extent in each of them
- Daghestanian Russian as a more uniform variety, probably due to a lower pervasiveness of Russian in every-day life, especially in the more isolated communities of the highlands
- The variables that turned out to be statistically significant are all logically related to L2 proficiency and exposure to the input, but there is no robust evidence for a contact explanation

# Prepositional drop

# Preposition drop in Russian spoken by Mari and Beserman bilinguals



Anastasia Yakovleva



Natalia Koshelyuk



George Moroz

## Aims and Research Questions

- a corpus-based study of preposition drop (p-drop) in the speech of Mari-Russian and Beserman-Russian bilinguals compared to the speech of Russian monolinguals;
- demonstrate that the prepositions *ν* 'in', *k* 'to', *s* 'with' are omitted in the speech of bilinguals more often than in monolinguals' speech;
- propose some possible explanations for the variation attested across different bilingual speakers.

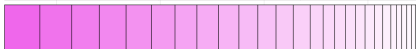


## Methods and Data

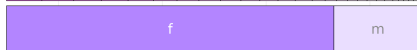
(1.1) corpora: 3



(1.2) speakers: 29



(1.3) gender



(1.4) year of birth



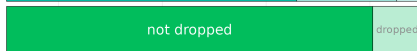
(1.5) years of education



(2.1) preposition lemma



(2.2) preposition drop



(2.3) following wordform's token



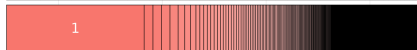
(2.4) following wordform's lemma



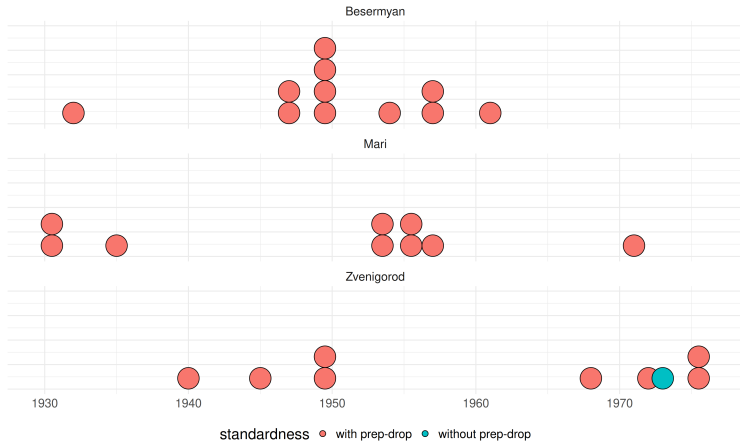
(2.5) following wordform's first sound



(2.6) dice coefficient



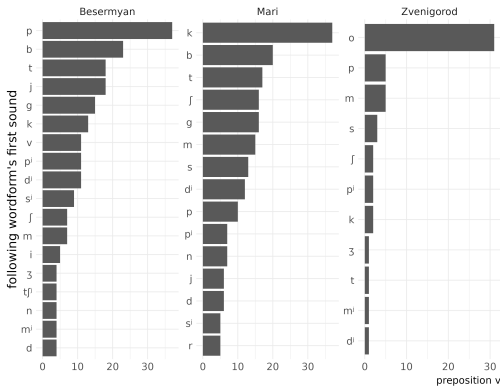
## Findings



- both bilinguals and monolinguals omit prepositions;
- however, they do it in different contexts and for different reasons

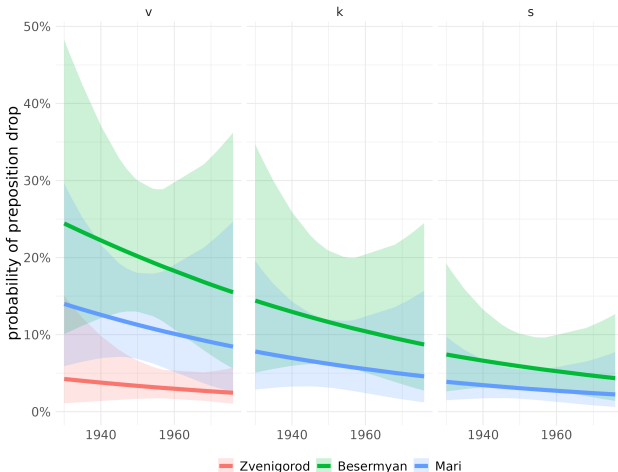


## Findings



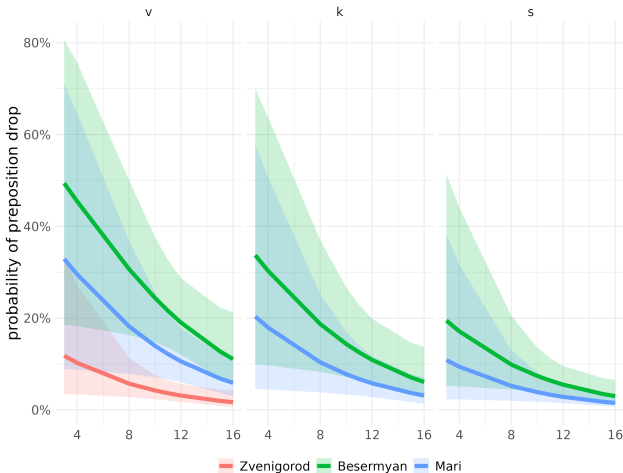
- In bilinguals, p-drop can possibly be explained by phonetic interference from their native languages (avoiding consonant cluster);
- monolinguals mainly omit prepositions in lexicalized expressions (v obschem 'in general').

## Findings: sociolinguistic factors



The older and less educated a person is, the higher the probability of prep-drop in their speech.

## Findings: sociolinguistic factors



The older and less educated a person is, the higher the probability of prep-drop in their speech.

# Preposition Drop in Chuvash



Anna Grishanova

## Preposition drop in Chuvash Russian

- The following prepositions were dropped at least once: v ‘in/to’, u ‘at’, na ‘on/to’, s ‘with/from/off’, iz ‘from/of’, do ‘up to/until’, čerez ‘via/through/later’.
- This includes syllabic prepositions (such as na ‘on’) that do not tend to drop in the speech of Mari and Beserman bilinguals:
- [na] kazhdom povorote stolba stoit ‘A pillar stands on every turn’

## Preposition drop in Chuvash Russian

- The omission of syllabic prepositions and sporadic nature of the drop of certain prepositions compelled a more semantic approach to this data. Thus, every context in the dataset was annotated according to four big semantic groups: location, direction, source and time.
- Another interesting feature found in Chuvash Russian speech was non-standard case usage, in particular the expansion of the Nominative case. Thus, we also annotated instances of non-standard case usage and used the following word's case as a factor in statistical modeling.

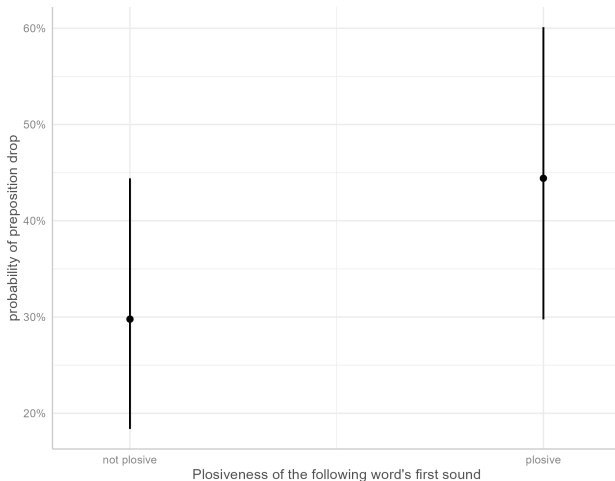
## Preposition drop in Chuvash Russian

We implemented a nested mixed effect logistic regression model.

Sociolinguistic factors like **age** and **years of education** appeared to be not significant. The significant factors turned out to be:

- semantics of the prepositional phrase
- the plosiveness of the following word's first sound
- the Nominative case of the following word
- dice coefficient
- the standardness of the following word's case

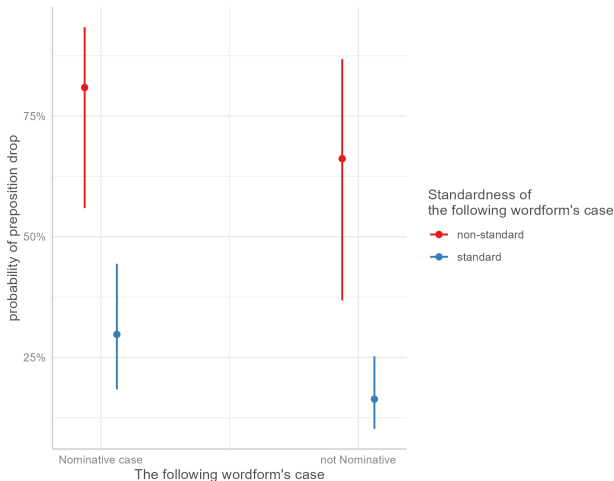
## Preposition drop in Chuvash Russian



The plosiveness of the following word's first sound increases the probability of a preposition drop

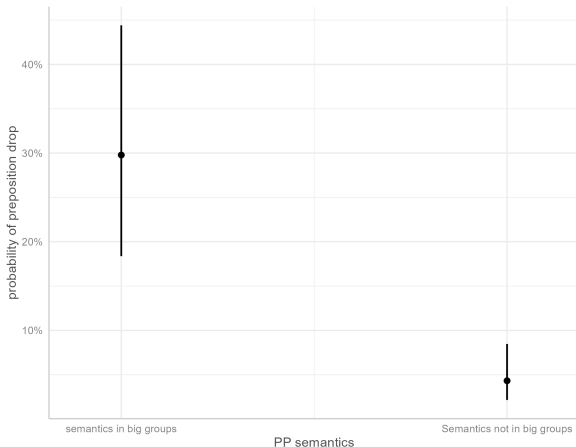


## Preposition drop in Chuvash Russian



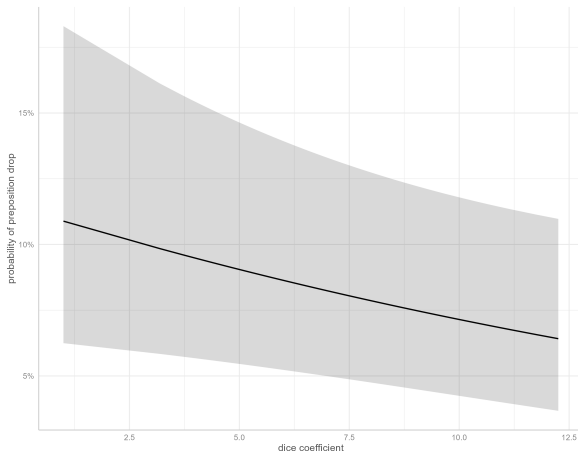
The Nominative or a non-standard case of the following wordform increase the probability of a preposition drop

## Preposition drop in Chuvash Russian



On the other hand, the semantics of the prepositional phrase not being that of location, direction, source and time decrease the probability of a preposition drop.

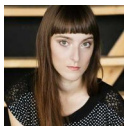
## Preposition drop in Chuvash Russian



Finally, just like in the study of preposition drop in the speech of Mari and Beserman bilinguals, higher degree of collocationality (dice coefficient) decreases the probability of the omission of a preposition.

# Gen Pl Forms

# Dialect Genitive Plural Forms in Numeral Constructions



Svetlana Zemicheva



Chiara Naccarato



George Moroz

## Motivation

- widespread feature
- was studied in standard Russian & bilingual varieties
- in standard Russian some special numerative forms tend to appear in numeral constructions (Kholodilova, forthcoming)
- dialect speech may be controversial to the tendencies observed in other colloquial varieties

## Examples

- Num(not-paucal)<sub>nom,acc,gen</sub> + N<sub>m,n-Gen.Pl</sub>
  - pjat' xozjaev-**ov** (dial. five owner-Gen.Pl)
  - pjat' xozja-ev-Ø (std. five owner-Pl-Gen)
- Num(paucal)<sub>acc,gen</sub> + N<sub>m,n-Gen.Pl</sub>
  - tridcat-i dv-ux god-**ov** (dial. thirty-Gen two-Gen year-Gen.Pl)
  - tridcat-i dv-ux let-Ø (std. thirty-Gen two-Gen year-Gen.Pl)

## Research questions

- What factors may affect the probability of use of dialect Gen.Pl forms in numeral constructions?
  - Overall frequency of dialect Gen.Pl in different contexts
  - Noun stem
  - Numeral-Noun collocationality level
  - Numeral form (Nom/Gen)
  - Year of birth
  - Education level
  - Gender
- Does dialect “overuse” [[Kasatkin, 2005](#)] of the *-ov* ending affect cases like *kilogram* vs *kilogram-ov*?



# Does dialect “overuse” of the *-ov* ending affect measure words?

No

# Does noun stem play a role?

# Geographical distribution

# Does overall frequency of dialect Gen.Pl significant?



## Is education level significant?

# Is the level of collocationality significant?

# Is the numeral form significant?

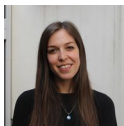


## Conclusions

- Dialect “overuse” of the *-ov* ending doesn’t affect measure words: zero inflexion forms (*kilogram*) are found in more than 90% of contexts
- Early year of birth & low education level make the probability of using dialect Gen.Pl form higher
- ‘The most frequent pairs survive’ (Chiara): the probability of dialect form higher for nouns which often cooccur with numerals
- The type of noun stem seems to be significant
- Potential contact influence in the case of Spiridonova Buda? (Belorussian)
- The correlation between the frequency of dialect Gen.Pl forms in numeral constructions and other types of contexts is questionable

# Neg Exist constructions

# Negative Existential Constructions



Chiara Naccarato



George Moroz

## Negative Existential Constructions

- Existential negation = negation strategies used in existential sentences of the type *there is/are no X (somewhere)*, in which the subject is typically non-referential
- We use the terms “existential negation” and “negative existential constructions” (NECs) in a wider sense to include constructions that are sometimes referred to as “locative negation” (*X is/are not in some place*, in which X is a definite subject) and “possessive negation” (*Y does/do not have X*); cf. [Veselinova, 2013, 110–111]
- All of them predicate absolute absence rather than relative absence, and Russian employs one and the same strategy in all three cases, which is different from the strategy employed in standard negation, i.e. negation of overt verb predicates

## Non-standard marking in NECs

- Variation in NECs in bilingual corpora (+ comparison with the monolinguals' variety of Russian spoken in Zvenigorod)

e.g. *gaz ne bylo* vs. *gaza ne bylo*

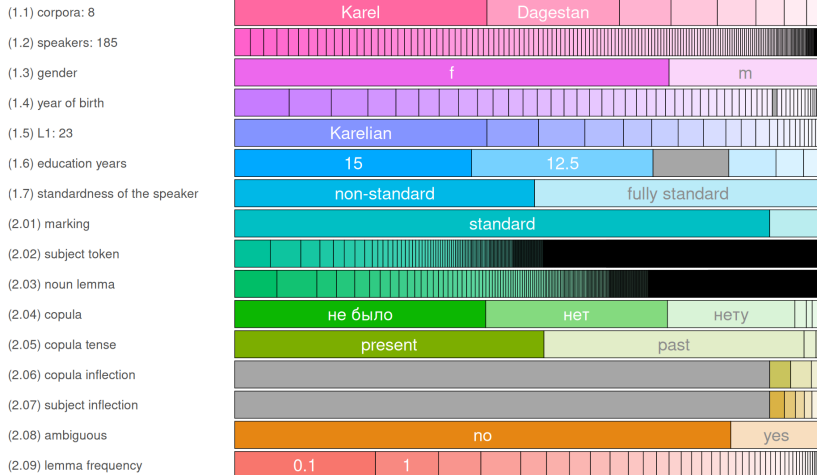
- Previous research on other L2 Russian varieties
  - Nanai and Ulcha Russian [[Stoynova, 2019](#), 27]
  - Moksha Russian [[Kashkin, 2020](#), 116]
  - Hill Mari Russian [[Kashkin, 2022](#), 39]
- Usually treated as a contact phenomenon because in the L1s of Russian bilinguals who display this trait there is no genitive (or any other special) marking of negated subjects

## Research questions

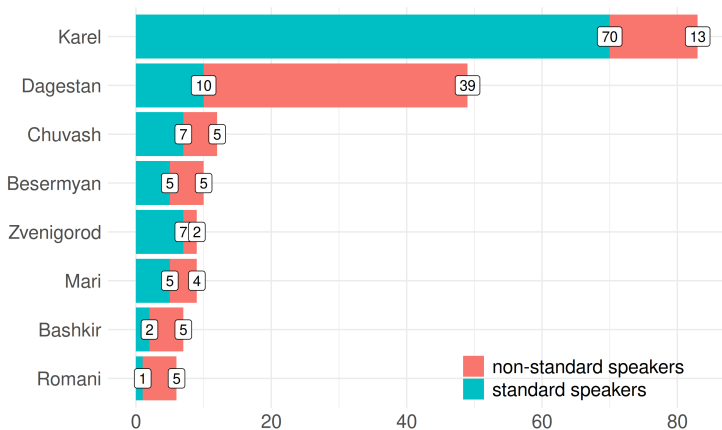
- Does the amount of variation in NECs differ across corpora and/or among speakers of the same variety?
- Can variation in NECs be explained in terms of contact influence?
- Do other factors promote or hinder variation in NECs?

# The database and parameters of data annotation

2,309 observations



## Fully standard (58%) vs. non-standard speakers (42%)







## Types of non-standard marking

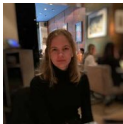
- Neuter copula
  - *gaz ne bylo*
- Non-neuter copula
  - *domane byl*
- Agreeing subject (could be pattern borrowing for Daghestan)
  - *bogatye ljudi ne byli*

# Statistical modelling



# Sideproject

## The Dial2 sideproject



Anna Panova



Olga Gich



George Moroz

# Plans

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- create more corpora
  - we can do within the Lab too (thanks to whisper speech to text model)



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- annotate more features
- make an Atlas of analyzed features
- analyze how features interact within the speaker

## References I

- M. Daniel, N. Dobrushina, and S. Knyazev. Highlanders' Russian: Case study in bilingualism and language interference in Central Daghestan. *Slavica Helsingiensia*, 40:65–93, 2010.
- Michael Daniel, Ruprecht von Waldenfels, Aleksandra Ter-Avanesova, Polina Kazakova, Ilya Schurov, Ekaterina Gerasimenko, Daria Ignatenko, Ekaterina Makhlina, Maria Tsfasman, Samira Verhees, Aleksei Vinyar, Vasilisa Zhigulskaya, Maria Ovsyannikova, Sergey Say, and Nina Dobrushina. Dialect loss in the russian north: Modeling change across variables. *Language Variation and Change*, 31(3): 353–376, 2019.
- L. L. Kasatkin. *Russkaya dialectologiya* [*Dialectology of Russian*]. Academia, Moscow, 2005.

## References II

- E. V. Kashkin. Osobennosti russkoj reči nositelej mokšanskogo jazyka [peculiarities of the russian speech of moksha speakers]. *Trudy instituta russkogo jazyka im V.V. Vinogradova*, 26(4):110–131, 2020.
- E. V. Kashkin. O nestandartnom (zametki o russkoj reči gornyx marijcev) [on non-standard features of russian in the grammar and lexicon of hill mari speakers]. *Rodnoj jazyk*, (2):35–51, 2022.
- I. Khomchenkova. Contact-induced features in the Russian speech of Nganasans. *Eesti ja soome-ugri keeleteaduse ajakiri. Journal of Estonian and Finno-Ugric Linguistics*, 11(2):13–37, 2020.

## References III

- G. Moroz. Phonetic fieldwork research and experiments with the R package phonfieldwork. In I. Kobozeva, K. Semyonova, A. Kostyuk, L. Zakharov, and N. Svetozarova, editors, «...Vperyod i vverkh po lestnitse zvuchashey». *Sbornik statye k 80-letiyu Olgi Fyodorovny Krivnovoy* [Festschrift in memoriam to Olga Fyodorovna Krivnova], pages 376–390. Buki Vedi, Moscow, 2023.
- George Moroz. *lingtypology: easy mapping for Linguistic Typology*, 2017. URL <https://CRAN.R-project.org/package=lingtypology>.
- A. Panova and T. Philippova. When a cross-linguistic tendency marries incomplete acquisition: Preposition drop in Russian spoken in Daghestan. *International Journal of Bilingualism*, 25(3):640–667, 2021.
- E. V. Rakhilina and A. K. Kazkenova. Zametki o russkom čisle [Notes on Russian number]. *Russian Journal of Linguistics*, 22(3):605–627, 2018.

## References IV

- K. Shagal. Contact-induced grammatical phenomena in the Russian of Erzya Speakers. In *Mordvin languages in the field*, pages 363–377. University of Helsinki, 2016.
- N. Stoyanova. Russian in contact with Southern Tungusic languages: Evidence from the Contact Russian Corpus of Northern Siberia and the Russian Far East. *Slavica Helsingiensia*, 52:9–36, 2019.
- N. Stoyanova. Nestandartnye količestvennye konstrukcii v russkoj reči nositelej nanajskogo i ul'čskogo jazykov [Non-standard syntax of numerals in the Russian of Nanai and Ulcha speakers]. *Russian Linguistics*, 45(3):305–334, 2021.
- L. Veselinova. Negative existentials: A cross-linguistic study. *Rivista di linguistica*, 25(1):107–145, 2013.