Framework for an Analysis of Slovene Regional Language Variants on Twitter

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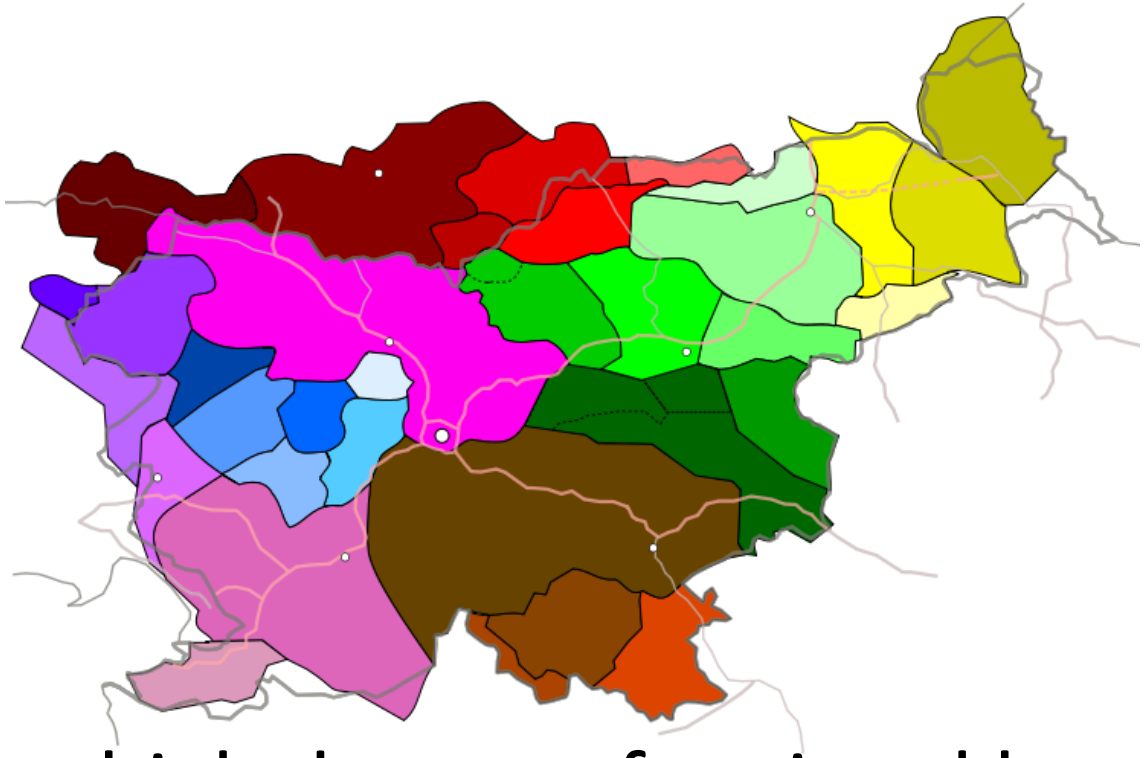
Introduction



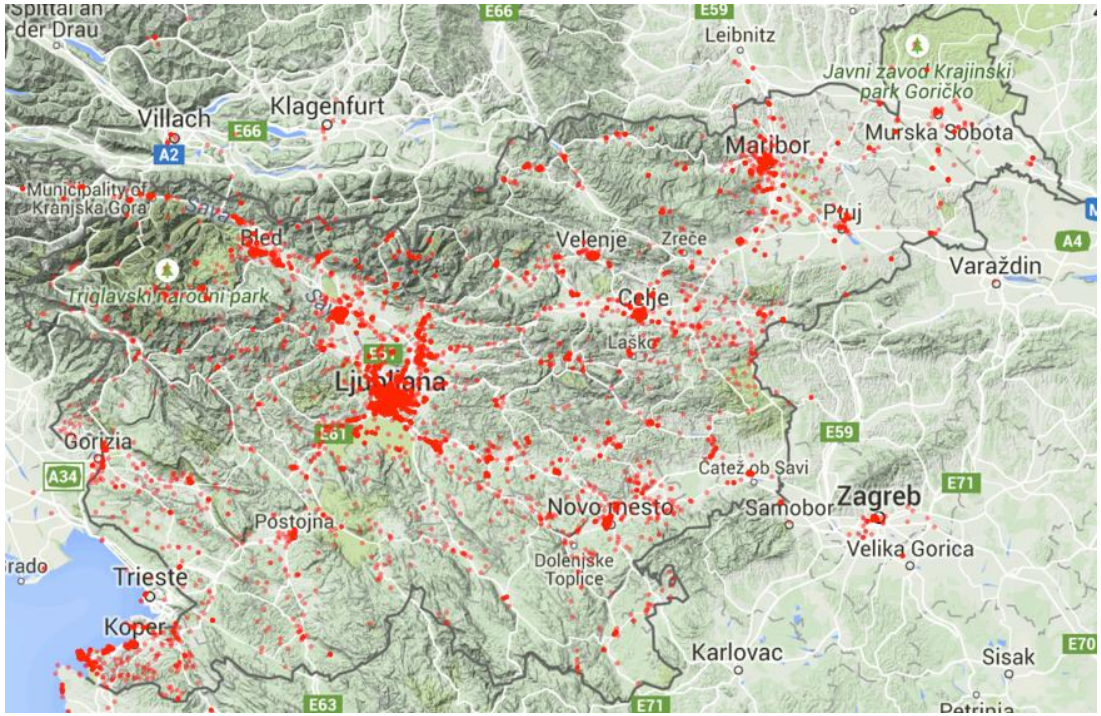
- high degree of regional language variation
- ~48 dialects (7 main dialect groups)

Motivation

- regional language variants in user-generated content
  - in Slovene UGC (Erjavec & Fišer 2013; Zwitter Vitez & Fišer 2015)
- linguistic analysis

Dataset Preparation

- 130,000 geotagged tweets from the JANES corpus of Slovene UGC (Fišer et al. 2016)



Regional Subcorpora

- 9 regional subcorpora (7 main dialectal groups + Ljubljana and Maribor)
- 90% threshold

Sampling

- Sampling criteria:
  - 500 tweets per region
  - only private users
  - non-standard tweets (L3) (Ljubešić et al. 2015)
  - all users included
  - max. 30–50 random tweets per user

- This paper: Primorska, Gorenjska, Štajerska

Typology of Non-Standard Slovene Language Elements

- manual analysis, bottom-up approach
- **7 main categories**, 105 different tags
  - **non-standard vocabulary** (ejga, čuj, nanka)
  - **reductions and ellipses** (čudno → čudn_)
  - **alternative graphemes** (ne vem → ne wem)
  - **non-standard morphology** (imate → imaste)
  - **spelling variants of frequent standard words** (jaz → jz, js, jst, jest, jast...)
  - **frequent transformations** (-aj- to -ej-, e.g. nekaj → nekej, včeraj → včerej)
  - **miscellaneous** (to je → toj)

Annotation

[token/phrase]{tag 1}{tag 2}{...}

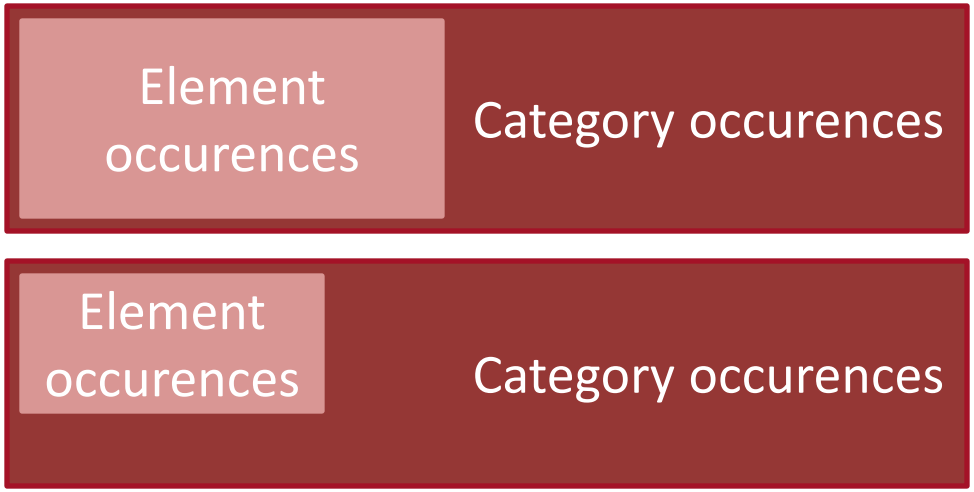
@RoganMatevz Ne ta vikend ne, [nasledn]{Rj.nj}{RksPme.i} pa [mogoč]{RksR.e} ... boš ti [nasledn]{Rj.nj}{RksPme.i} vikend doma? :) Rose me čaka ne? :D

(Preliminary) Annotation Results

Category	Primorska	Gorenjska	Štajerska
Non-standard vocabulary	394	347	371
Spelling variants of frequent standard words	233	**322**	183
Alternative graphemes	40	**54**	34
Reductions and ellipses	588	**1122**	648
Non-standard morphology	90	99	67
Frequent transformations	120	**181**	68
Miscellaneous	39	59	24
Total	1504	**2184**	1395

Measures of Regional Specificity and Dispersion

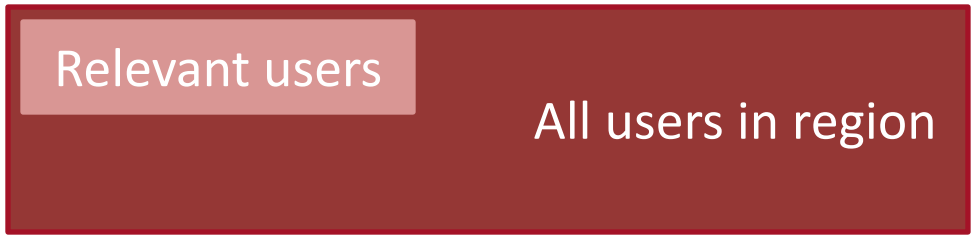
- relative frequency (f_R)
  - element occurences / category occurences
  - higher f_R → occurs more often within region
  - lower f_R → occurs less often within region



Measures of Regional Specificity and Dispersion

- user ratio (*u*)
  - percentage of users in region using the element
  - higher *u* → more widespread in region

  - lower *u* → less widespread in region



Measures of Regional Specificity and Dispersion

- type/token ratio (*t*)
  - penalises elements occurring often, but with a limited number of types
  - Example: kmalu ('soon') → kmal_ (final u ellipsis)

Measures of Regional Specificity and Dispersion

- annotation ratio (*a*)
  - tags element is used with / all tags in category
  - penalises elements occurring only with a limited number of tags (e.g. only with adverbs)
  - higher *a* → occurs in more word positions and with more PoS categories
  - lower *a* → fewer positions, fewer PoS categories

Measures of Regional Specificity and Dispersion

- coefficient of regional dispersion (δ_R)
  - summary of all measures
  - higher δ_R → more widespread and regionally specific

$$\delta_R = f_R \times u \times t \times a \times 100$$

Example: Final -i ellipsis

	Gorenjska	Štajerska	Primorska
f_R	0.52	0.60	0.47
u	**0.75**	**0.42**	0.54
t	**0.61**	0.53	0.67
a	**0.43**	**0.41**	0.24
δ_R	**10.25**	5.41	**4.08**

Conclusion

- dataset and typology for an analysis of Slovene regional language variants on Twitter
- measures of regional specificity and dispersion
- Future work:
  - annotation of all regions
  - finalisation of the typology
  - comparison with existing dialectological studies
  - comparison with statistical tests

Thank you.