Register versus idiolect variation

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Introduction

MDA framework

- language variability can be caused by several different phenomena, e.g.
  - register
  - author/speaker
- MD model based on the *Koditex* corpus
  - 8 dimensions
  - explains 56% of variability
  - position of a text in 8D space

Research questions

How can the MD model help:

- in analyzing elicited data?
- in quantifying differences between elicitation scenarios?
- in analyzing register versus idiolect variation?

CPACT data

Speakers

- data collected within CPACT project (GA ČR 16-19087S, D. Kučera)
- 200 native speakers of Czech
  - proportionate stratified sampling
  - selected according to the criteria of age (15–24, 25–34, 35–55 and 55+), gender, highest achieved level of education
  - rich psychological metadata – results from several psychological tests, e.g. *Big Five personality traits* (extraversion, conscientiousness, openness to experience, agreeableness, neuroticism), *DASS 21* (Depression, Anxiety, Stress Scale) etc.

Texts

- each participant wrote 4 texts within one day
- requirements:
  - length: 180–200 words
  - form: letter
  - follow task scenario
- scenarios describe situational setting + motivation
- defined by 2 criteria, **formality** and *interpersonal stance*:

	Informal	**Formal**
Dominant	Letter from vacation	Letter of complaint
Submissive	Letter of apology	Cover letter

- analysis – same set of features as used in original MDA
- results projected onto original MD model

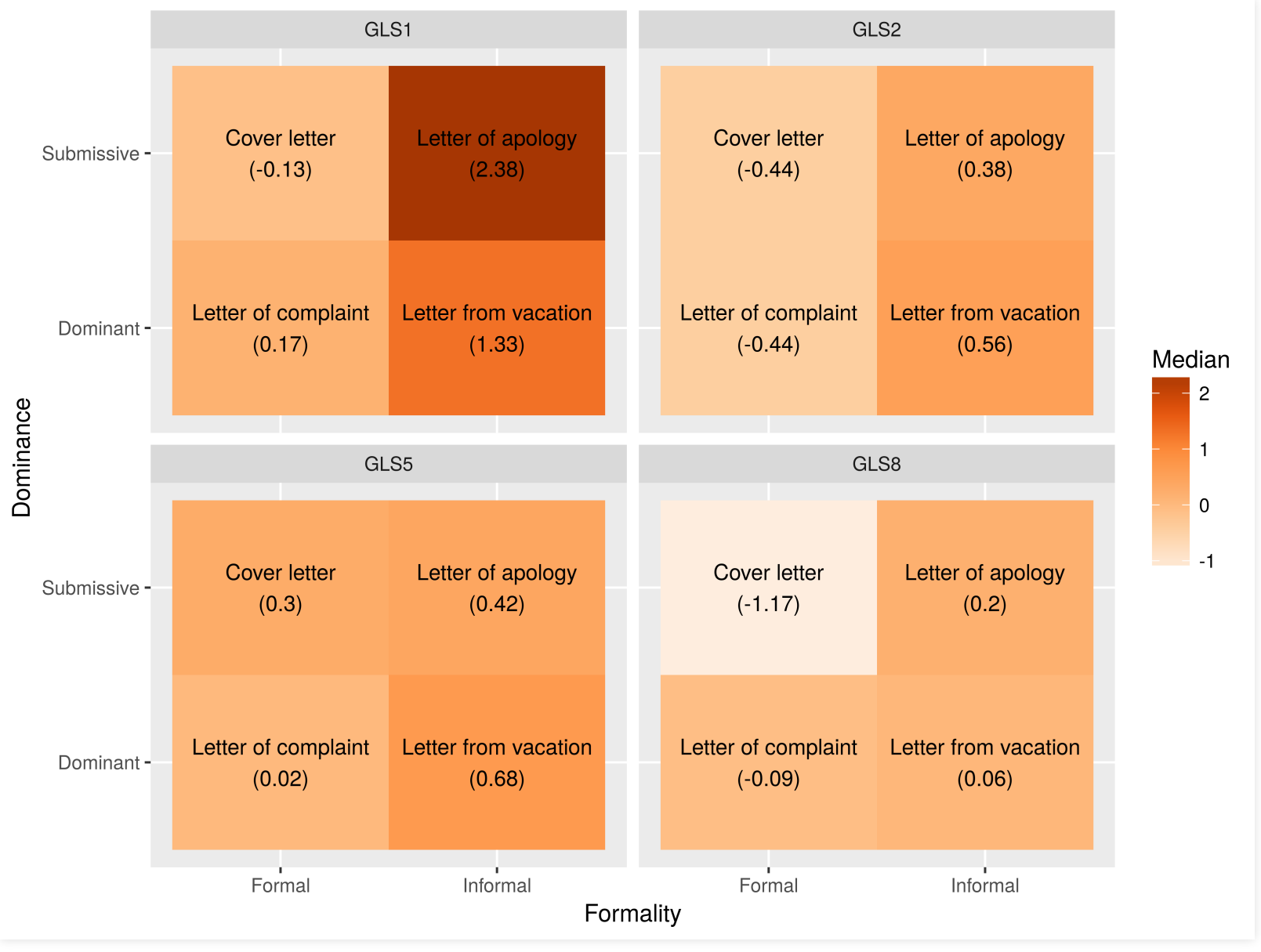
Register variability of elicited texts

Validity of elicited texts

- psychologically oriented analyses of linguistic behavior often based on texts elicited through carefully devised scenarios (e.g. Knapp, et al., 1974; Fisher, 1993; Newman, et al., 2003)
  - advantages: controlled environment, diversity of scenarios $\Rightarrow$ diversity of elicited data

- Are there systematic differences between texts elicited by different scenarios?
- How to design scenarios to be meaningfully distinct in terms of the language they elicit?
- Which scenarios contribute to the diversity of the resulting material?

Elicited texts in 4 dimensions



Differences between scenarios

- position of elicited texts (CPACT) corresponds to similar non-elicited texts (Koditex)
- each task = specific situation, setting
  - formal tasks (cover letter, letter of complaint): large overlap in the MD model
  - *letter from vacation*: greatest within-task variability
- scenarios differ in “degrees of freedom” given to author
  - the more rigid and highly conventionalized a type of text is, the less room for individual variability

Register versus idiolect

Motivation and overview

CPACT data:

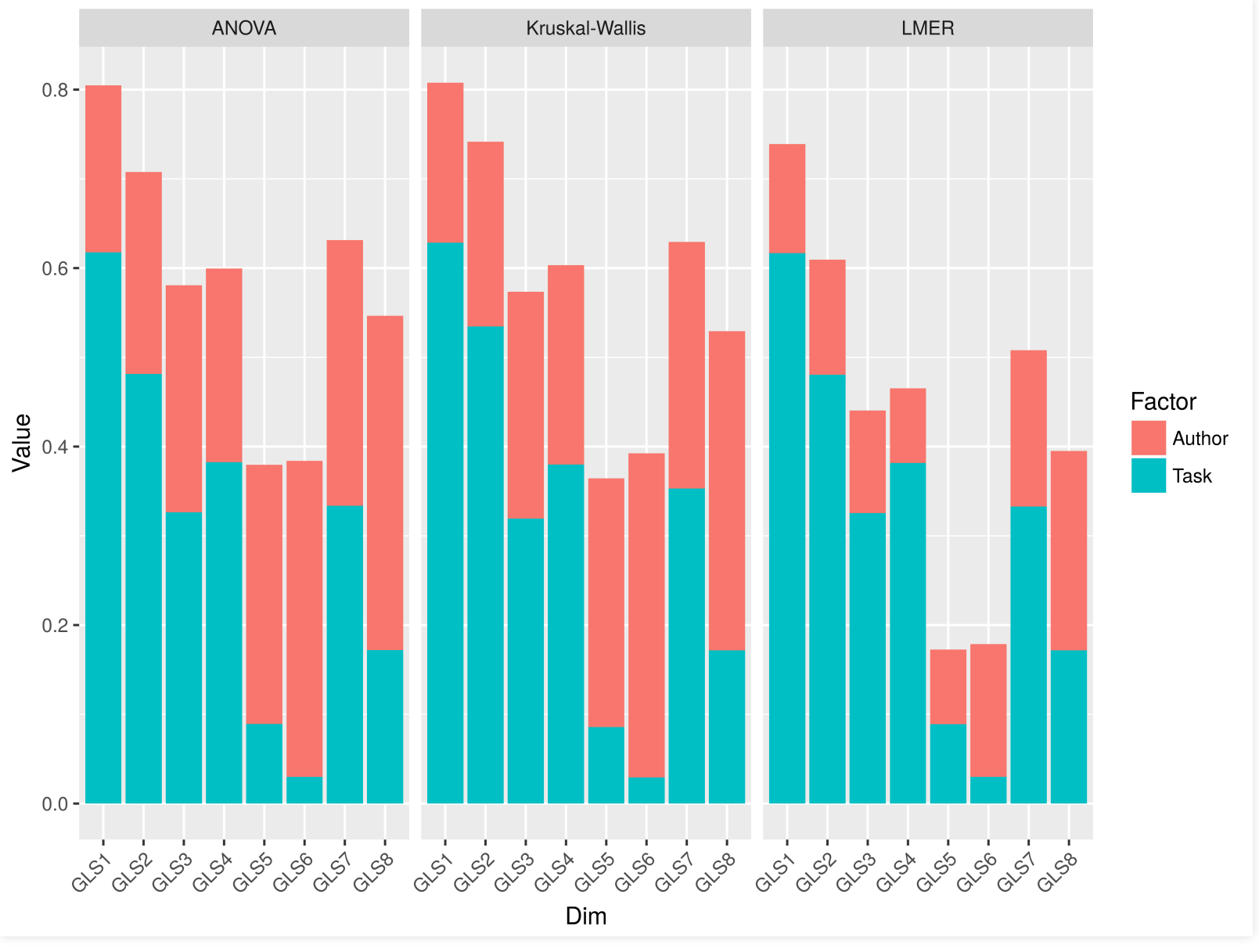
- a unique opportunity to study the interference of idiolect
- approximations:
  - *idiolect* = 200 speakers – balanced stratified sampling
  - *register* = 4 scenarios (tasks) – situation (formality), context (stance)
  - all texts are letters – the difference between scenarios should be subtle (!)

Methods

- Statistical modeling:
  - ANOVA – effect size (η)
  - Kruskal-Wallis test – effect size (E_R^2)
  - Linear Mixed-effects models (LMER) – coefficient of determination (R^2)
- Intuitive approach:
  - determining average distance in MD space

Results – statistical models

Surprisingly (?) similar results:



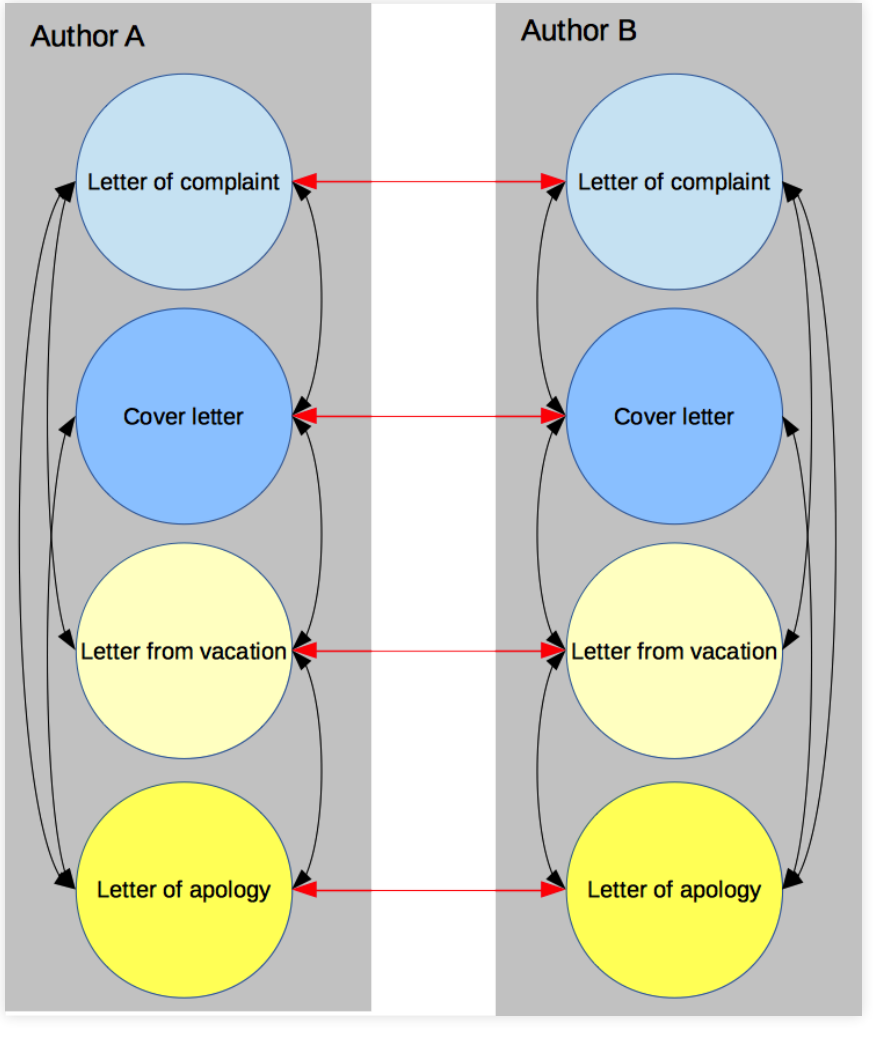
Results – statistical models

Proportion of variation accounted for by `task` and `author` in all dimensions (weighted with regards to the "importance" of individual dimensions):

Method	wAverage.Task	wAverage.Author
ANOVA	0.6119	0.3881
Kruskal-Wallis	0.6279	0.3721
LMER	0.7273	0.2727

Intuitive approach: distances between texts

Same author (black) vs. identical register (red)



Results – distances

Central tendency and spread of distances:

group	mean	median	sd	mad
same_auth	1.460	1.418	0.539	0.546
same_task	1.096	1.048	0.375	0.359

This is in agreement with the statistical models:

- texts of one author differ more than texts based on one scenario
- → scenario (task) is a better predictor of position within MD space

Conclusions

Conclusions

- an MD model can help in assessing the *ecological validity* of elicited texts
  - are they what/where we expected them to be?
- projecting elicited data onto the MD model can reveal key differences (or overlaps) between scenarios
- controlled settings of CPACT data allow for the combined study of *idiolect and register variation*

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