

# Analysis of Discourse Macrostructure in Schizophrenia: a Corpus Study

Galina Ryazanskaya, Khudyakova Mariya

Fundamental and Applied Linguistics, HSE, Moscow

## Introduction

- Schizophrenia is a complex highly heritable mental disorder, characterized by a disintegration of the process of thinking, loss of contact with reality, and emotional responsiveness
- One of the diagnostic criteria for schizophrenia in both DSM-5 [Tandon et al., 2013] and ICD-10 [ICD, 2018] is disorganized, bizarre speech
- There are several measures of discourse incoherence, which are well studied in aphatic speech [Khudyakova et al., nd]
- We concentrated our attention on measures from several different articles:
  - 5-score scale for local and global coherence [Davis and Coelho, 2004]
  - violations of completeness (measure of informativeness) [Christiansen, 1995, Khudyakova et al., nd]

## Materials and Methods

**Hypothesis** (based on previous research [Ditman and Kuperberg, 2010])

- Lower scores on local and global coherence measures for participants with schizophrenia
- Somewhat lower scores on informativeness measures for participants with schizophrenia due to executive dysfunction

### Participants

- 9 outpatients diagnosed with schizophrenia and 10 controls from Russian CliPS [Khudyakova et al., 2016]

### Method

- The Pear Film [Chafe et al., 1980] retelling
- ELAN annotation as in Russian CliPS [Khudyakova et al., 2016]
- Utterance segmentation, application of coherence scaling and violations of completeness measuring

## Results

There were no statistically significant differences between two groups  
The results of t-test (and one Kruskal-Wallis test):

Characteristics of the texts and differences between groups					
measure	Control		Schizo		p-value
	Mean	SD	Mean	SD	
Global coherence	4.39	0.39	4.10	0.53	0.201
Local coherence	3.77	0.26	3.45	0.44	0.120
Absolute completeness violations	0.50	0.70	1.44	1.42	0.098
Average completeness violations	0.02	0.02	0.05	0.14	0.098
Number of utterances	38.40	13.29	27.11	12.48	0.073

## Conclusions

Absence of significant difference may be due to:

- Small sample size
- Differences in symptoms
- Treatment
- Subjectivity of some methods (+absence of second annotator)
- Inapplicability of the methods

## References

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