

## **Visualization of text data and mapping of statements by Zemstvo deputies**

Nadezhda Povroznik

The establishment of zemstvo self-government in Imperial Russia in the second half of the XIX century became an important stage in the development of representative institutions in general and in particular the State Duma as the first representative and legislative body in the country. The introduction of the Zemstvo was one of the most important liberal reforms of Alexander II, as it gave a certain freedom to the population in terms of self-government. Despite the fact that the legislation strictly regulated the powers and scope of zemstvo activities, leaving for them only the social and economic sphere, the zemstvo institutions played an important political role in the subsequent establishment of the main representative institution in Russia - the State Duma, established in 1905.

The significance of the Zemstvo is not only in the development of the social and economic environment in the country's regions, but also in the formation by the Zemstvo deputies of the first patterns of self-government and interaction on the basis of electivity. There were no such patterns before, because there was no other elected state or private institutions within which such patterns could occur. Zemstvo deputies had to develop new models of behavior, to adapt to new conditions for successful and effective work of the Zemstvo. The law founded a circle of Zemstvo powers limited by the social and economic sphere. Speeches of deputies in meetings are an important component of the analysis of the activities of deputies in the Zemstvo, because they reflect their views, competence in various issues, and views on the development of Zemstvo activities. The study of the speeches of deputies in meetings is an intermediate stage of the project being implemented [1] and its results are a necessary link for further modeling of Zemstvo deputies' behavior on the basis of a set of quantitative and qualitative characteristics.

Quantitative content analysis and the method of mapping the texts of Zemstvo deputies' speeches are realized for the first time in the historiography of Zemstvo activities [2].

The purpose of this stage of the study is to classify the deputies according to their speeches in terms of the diversity and completeness of the topics, and the identification of their universal (broad) or expert (specialized) participation in the issues discussed.

The main sources for the study of speeches are the journals of the provincial Zemstvo meetings. The journals of the Moscow provincial Zemstvo contain the

most detailed transcriptions in comparison with the Zemstvos of other provinces. The journals contain transcripts of meetings, including verbatim debates on the agenda and discussions on unplanned issues. For the analysis, the first three-year period of functioning of the Moscow provincial Zemstvo (1865-1868) was selected from the moment of its establishment in Russia.

The analysis of the speeches of deputies is based on the application of the method of personal mapping of the speeches of deputies. Mapping of speeches is a method of visualization and analysis of text data obtained on the basis of quantitative content analysis and allows to present thematic diversity of speeches of deputies of the meeting, to trace their dynamics, to determine the presence of specialization (expert approach) of deputies according to the topic of their speeches or to reveal universal (wide) coverage themes. The construction of individual maps allows classifying deputies by types of speeches, as well as highlighting the most common types of speeches in the meeting.

This study was conducted in several stages:

1. First, a corpus of texts was formed on the basis of the Moscow Provincial Zemstvo Assembly journals for the 1865-1868 period (6 journals were published in total for three regular and 3 emergency sessions of the meeting, or 2 312 pages, or 554 313 words). Preliminary the Journals were digitized, recognized on basis of OCR and expertly edited.
2. Using the AntConc program, a list of word forms was compiled, and significant word markers (more than 500) were identified;
3. Based on the study of the words-markers and the context of their use, 17 thematic blocks were singled out (such as Zemsky finance and taxes; Medicine; Education; Infrastructure and facilities; Veterinary and Animal Husbandry; Social support; Ways of communication and transport; Construction and repair; Entrepreneurship; Socio-ethical problems; Industry and crafts; Agriculture; Food supply; Military affairs; Prison, police, law enforcement; The Church and the Clergy; Fire protection);
4. The corpus of the texts of the journals was fragmented into personal text blocks containing speeches of individual deputies;
5. Personal texts were analyzed according to the occurrence of word markers on the selected thematic blocks, frequency tables were drawn up that displayed data for each speaker;
6. Personal maps are constructed.

The map is an area diagram reflecting the quantitative characteristics of the deputy's speeches on defined topics and their distribution by sessions. The

visualization of data on the speeches of each deputy on the basis of maps allows us to present the diversity of the speeches of deputies both during individual sessions and the triennium as a whole. With the help of maps, the dynamics of discussions and the activeness deputies' participation in Assembly became visible.

The analysis of maps allows for the distinguishing of three groups of speeches: 1) on a wide range of topics (the universal nature of the speaker) (12-17 voiced topics); 2) on 7-12 topics; 3) for 1-6 topics. In addition, there is a tendency for a number of deputies to be less versatile by the end of the three-year period.

Next is the study of the relationship between the topic and the nature of the speeches with the professional characteristics, working experience outside the Zemstvo, attendance of meetings, membership in the Zemstvo' commissions, and the influence of other socio-cultural characteristics on speeches in the meetings.

#### References:

- [1] The study is supported by RFBR grant No. 17-06-00470.
- [2] Chernozhukov A.S. Historiography of the history of zemstvo self-government in Russia of the modern period // Bulletin of Science and Education. 1 (2014). Pp. 22-28 (in Russian).