International Cartographic Association
Association Cartographique Internationale

Application of relational analysis in the historiography of cartography – case study of Polish Cartographical Review bibliography

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Keywords: history of cartography, relational analysis, actor-network theory, Polish Cartographical Review, bibliography

Abstract:

"Polski Przegląd Kartograficzny" (hereafter PPK) is the oldest Polish cartographic journal. In the years 1923–1934, it was published in Lviv with Eugeniusz Romer as editor-in-chief (Romer, 1923). After the Second World War, publication resumed in 1969. Since 20215, the journal has been published in English as "Polish Cartographical Review" (PCR) with a supplement fully in Polish ("Polish Cartographical Review. Suplement w języku polskim", PCR Supplement). The achievements of Polish cartography have been thoroughly documented by Jerzy Ostrowski (Konopska and Karsznia, 2023), and only some aspects have been studied in-depth (e.g. the history of cartography, see Skrycki, 2016).

However, if we consider the discipline of cartography in Poland as a whole, the bibliography compiled by Zenon Kozieł (2021) is the most complete synthesis of its accomplishments. The bibliography (available in paper or PDF format) provides an unrivalled insight into the history, and thus the development of the discipline in the years 1923–2000. After consultation with the editor of the bibliography, we attempted to transfer the data into a relational database and perform a relational analysis. The scope of the study included articles and notes published in PPK, PCR, and PCR Supplement between 1923–1934 and 1969–2022. To analyse the 100-years history of the journal (1923–2023), we added the publications from 2021 and 2022 to the dataset. The data model and the relational database were created in the Nodegoat environment (Figure 1, Bree and Kessels, 2013). After verification of the data for completeness (e.g. missing information on issue, year of publication), the resulting tables contained a total of 1,285 publications by 528 authors.

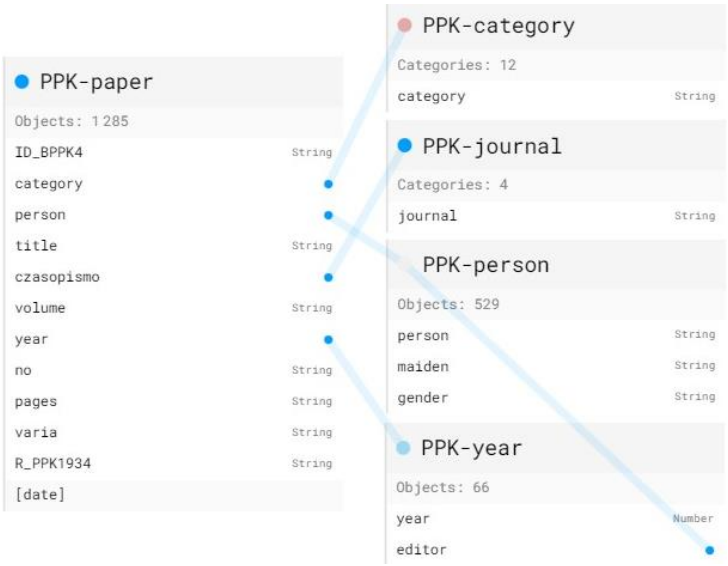

Figure 1. The data model in the Nodegoat environment.

Within the available material, we decided to trace relationships between objects – understood as authors and editors-in-chief (Figure 1, PPK-person), publications (PPK-paper), volumes (PPK-year), categories (thematic classification of

https://doi.org/10.5194/ica-abs-7-156-2024

publications according to J. Ostrowski, PPK-category,) and versions of the journal (e.g. pre- and post-war volumes, PPK-journal).

In terms of authors, we found three people who had published 50 or more papers. Interestingly, the next person on the list had *only* 28 papers. Concerning the relationships between authors, the data we collected allowed us to identify the most common authors' collaborations, the authors with the largest number of collaborators, and the authors who only published alone (Figure 2). It was also interesting to analyse the links between researchers and thematic categories. In particular, to track the concentration or, on the other hand, the versatility of authors' interests. We identified four authors who published papers classified in up to seven thematic categories. In terms of thematic categories, the area with the highest percentage of publications was the history of cartography (26%), followed by the theory and methodology of cartography (19%).

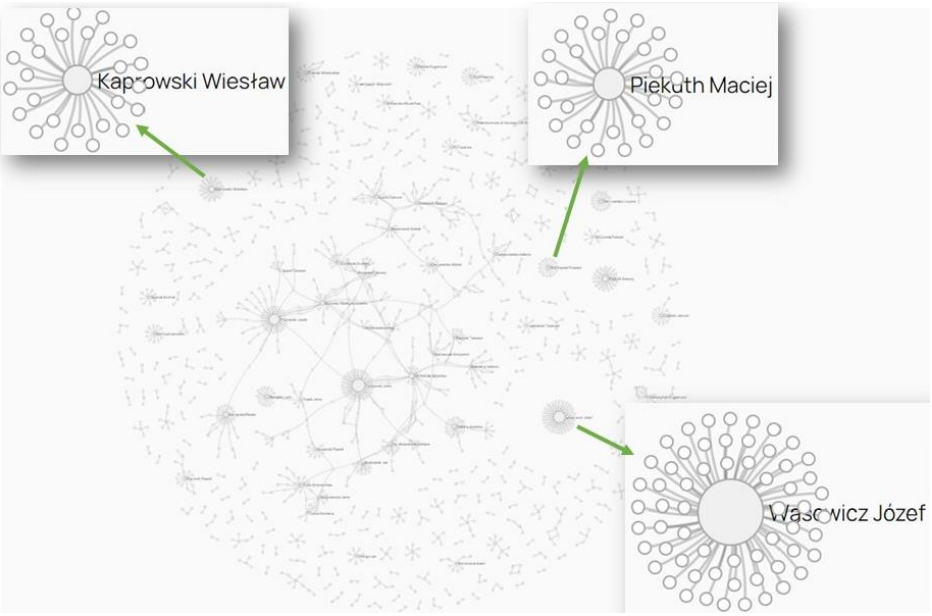

Figure 2. Relations (joint publications) between authors of the papers in the Polish Cartographical Review. Zoomed-in parts show nodes representing persons with the largest number of single-authored papers. Visualisation created in Nodegoat environment.

In the future, we plan to make the data and data model available. Yet, it will be necessary to constantly update the database with new publications from PCR and the PCR Supplement. It also seems valuable to complement the publications table with links to full versions of the texts (available online) as well as a DOI, which would allow for the unambiguous identification of the paper. The information about the authors could be supplemented with ORCIDs and affiliations (former and current), which would enable an analysis of the spatial aspects (e.g. universities vs. research topics).

Acknowledgements

We would like to thank Professor Zenon Kozieł for providing the editable (pre-print) file of "Biblioteka Polskiego Przeglądu Kartograficznego. Tom 4: Polskie piśmiennictwo kartograficzne 1968–2020". Without the work of the Professor and his team, it would be impossible to conduct all of the analyses.

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