

Computational Geospatial Analysis of German Schoolbooks in the 20th Century

Conference Presentation

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Digital Humanities in the Nordic Countries 2018
Helsinki (FIN), 7-9 March, 2018

Introduction

- Our presentation presents some preliminary results from a early-stage PhD project focusing on country images in German geography schoolbooks in the 20th century
- This PhD project is part of a larger research agenda seeking to develop computational methods and tools designed and tailored for questions relevant for historical and social scientific research
- **The results presented today are preliminary and intended primarily to introduce our approach!**
- All analysis and visualisations are made with **R + ggplot2** (<http://www.r-project.org/>) and **Visone** (www.visone.info)

Project presentation

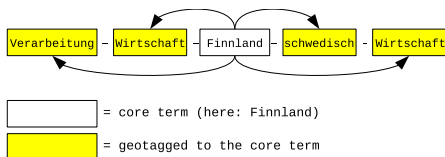
- Virpi Kivioja's PhD thesis: "An international triangle drama? Image of West and East Germany in Finnish and image of Finland in West and East German geography schoolbooks in the Cold War" (working title)
- The elementary knowledge and impressions offered at school
 - Facts, statements and ideas presented about Finland and both Germanies
 - Finland–Germany relations
 - Contexts, vocabulary in schoolbook texts
- Also: Europe as a (human-made) whole
 - Finland and Germany positioned in relation to European integration
- Material for today: German schoolbooks
 - Chapters discussing Nordic countries, including Finland
 - Chapters discussing Europe as a whole

On Material

- Our primary material consists of German - both Eastern and Western - geography schoolbooks
 - West German schoolbooks from 1946 to 1999 (n=77)
 - East German schoolbook from 1946 to 1999 (n=14)
- Original schoolbooks were first scanned and processed with optical character recognition (OCR), then lemmatised with a German tree tagger software, and finally stored in a document corpus for further analysis together with added meta-data
- Although the results from the OCR and lemmatisation were quite robust, manual processing still needed

On Method

- The analysis for this presentation focuses on differences and similarities in the geospatial distribution of central concepts
- We used geospatial plots and networks to visualise geographical focuses and conceptually cohesive regions
- Helps us to identify regional/geospatial differences in the use of different concepts
- The data was created by geotagging $-/+ 2$ terms around a geographical reference
 - Surrounding concepts were tagged with geocodes (coordinates)
 - Only nouns and adjectives (without stop words) were tagged

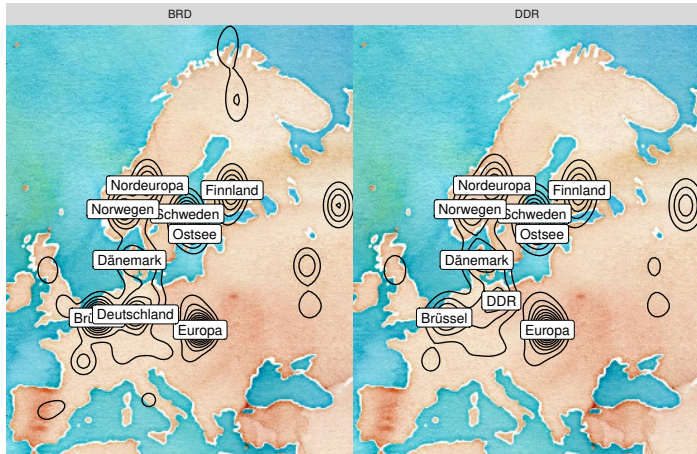


- The analysis includes the 100 most frequently named geographical regions

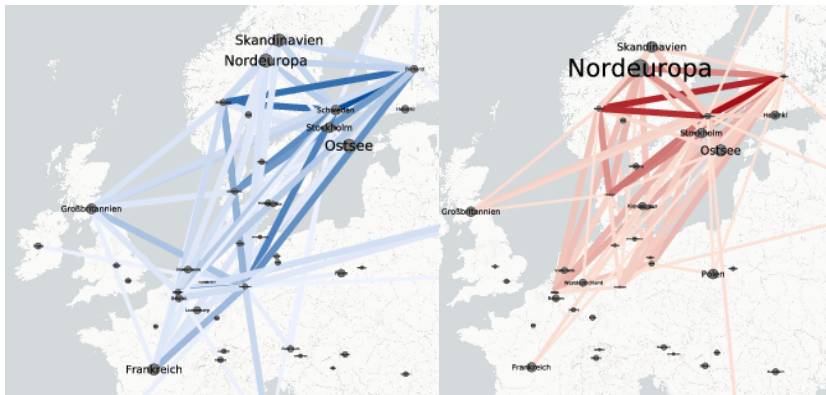
Geospatial Focus in German School Books

Geographical focus of FRG/GDR school books (region: Europe, most frequent regions with labels)

Source: own digital corpus



Geospatial focus in German School Books



Regional similarity based on the amount of shared concepts (100 most coherent regions without "Europa". Left: FRG, right: GDR (Node (label) size: # of mentions).

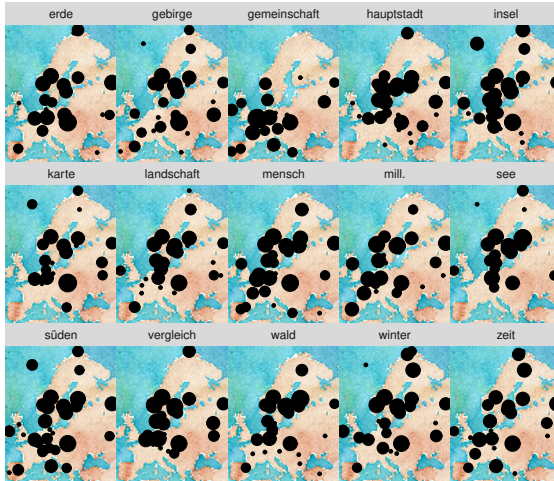
Some observations

- We can identify geospatial differences between Western and Eastern Schoolbooks when it comes to their geographical focus
 - Western German schoolbooks are more focused on Western Europe and on Franco-German region
- Based on the vocabulary used to describe and present the Nordic countries, our data evidences a relatively high cohesion
 - Strong concept correlation between the Nordic countries
 - A relatively high conceptual cohesion between Western European countries and the Nordic region both in Western and in Eastern German schoolbooks
- The Nordic countries as a "coherent region"? The Nordic countries as a Western community?

Geospatial focus in German School Books

Geospatiality of top concepts in FRG school books (region: Europe)

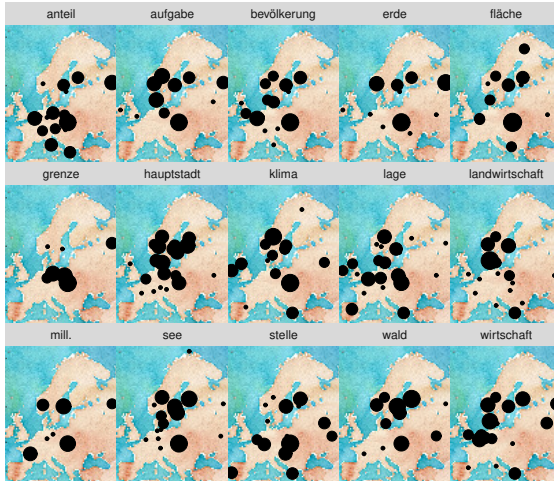
Source: own digital corpus



Geospatial Focus in German School Books

Geospatiality of top concepts in GDR school books (region: Europe)

Source: own digital corpus



Some observations

- Once again, certain differences in the frequently used non-geographical concepts could be identified between Western and Eastern German schoolbooks
 - Shared concepts include: "Erde" (earth, ground), "Wald" (forest), "Hauptstadt" (capital), and - surprise, surprise! - "See" (lake)
 - FRG-specific concepts were clearly related to geography, e.g. "Insel" (island), "Gebirge" (mountains), "Landschaft" (landscape), "Winter" (winter)
 - GDR-specific concepts include "socialist vocabulary", e.g. "Landwirtschaft" (agriculture) and "Grenze" (border). Actually, "Grenze" focused on the inter-German border

Concluding remarks

- *Summa summarum*: in German geography schoolbooks...
 - ... (certain) non-geographical concepts do have distinct geo-collocations
 - ... high concept correlations = great similarity between certain regions
- Next possible steps:
 - Adding temporal layers \Rightarrow visualising changes over time
 - Making the corpus available for other researchers, e.g. as an internet-based database
 - Developing analysis and visualisation techniques better equipped to geospatial content analysis

Thank you for your attention!

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