

Network Analysis and the Intelligence Cycle

Conference paper, "The Future of Historical Network Research"
Conference

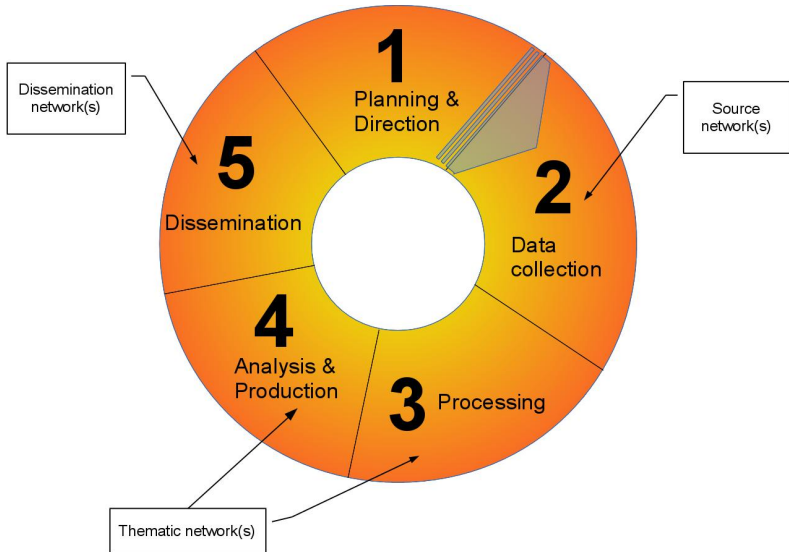
Adjunct professor, Dr Kimmo Elo
University of Turku, Dep. of Politics and Contemporary history
Åbo Akademi University, German studies

Hamburg, Germany 13-15 September 2013

About my presentation

- My presentation will illustrate how network analysis and visualisations could be used to model and analyse the structure and dynamics of the intelligence cycle
- Network analysis has been successfully applied e.g. in criminal studies or terrorism studies, but not that much in intelligence studies
- By using East German foreign intelligence data on Nordic affairs as the empirical example, my presentation will exemplify how historical network analysis could be used to uncloak and model network structures and dynamics underlying the intelligence cycle
- Visualisations will be used and discussed to exemplify the potentiality of historical network analysis
- Visualisations made with **Gephi** (<https://gephi.org/>) and **Cytoscape** (<http://cytoscape.org/index.html>)

The Intelligence Cycle and Its Networks



Material I

- The empirical data consists of the so-called SIRA (*System der Informationsrecherche der HVA*) database entries
- SIRA was developed for maintaining the intelligence cycle on a daily basis
- All intelligence delivered to the HV A from the sources and reports disseminated by the HV A was registered in the SIRA
 - **No** original documents included, just operative information from the perspective of the HV A
 - Original documents were destroyed in late 1989 and early 1990
- SIRA is built as a relational database and consists of four main tables (sub-databases) storing intelligence on different themes. Additionally, administrative information of operations has been stored in the sub-database #21.

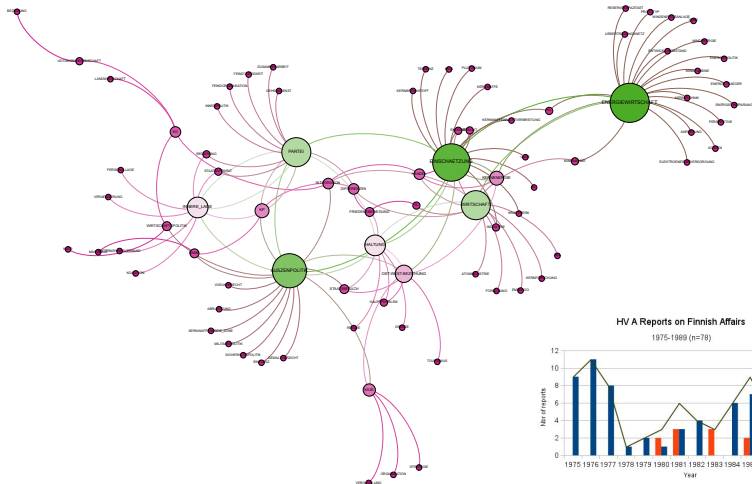
Material II

- This presentation uses records on reports (*Ausgangsinformationen*) containing information e.g. about sources used for the report, dissemination and country references
- Reports selected for this presentation are from the sub-databases #11 (scientific-technical espionage) #12 (domestic and foreign policy) and have a country reference "Finland" (N=78)
 - Reports cover the years 1975-1979 and used raw data delivered by over 150 different sources
 - A majority of the analysed reports were produced by the department VII/2, responsible for reports on NATO, Western industrial nations, international organisations (EC, OECD, EFTA). A special attention was paid to the CSCE and problems of the "imperialist integration policy"

SIRA record for "raw data"

[illegible]

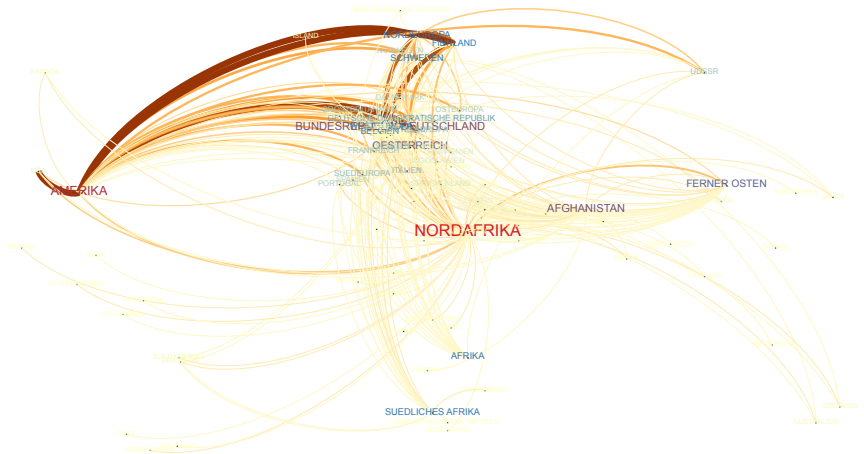
Step I: Thematic network of reports



Source: Own calculations based on SIRA data about reports on Nordic affairs 1975-1989 (data: BStU)

Layout: Yifan Hu Multilevel (based on force-directed model, but reducing complexity) [Gephi]

Step I: Country network of reports



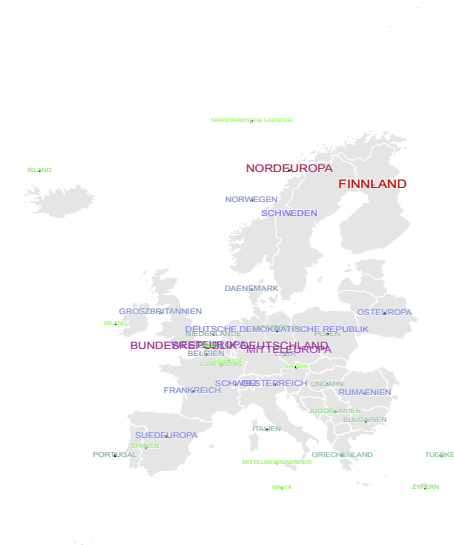
Source: Own calculations based on SIRA data about reports on Nordic affairs 1975-1989 (data: BStU)
Layout: GeoLayout (mercator projection world map) [Gephi]

Source: Own calculations based on SIRA data about reports on Nordic affairs 1975-1989 (data: BStU)
Layout: GeoLayout (mercator projection world map) [Gephi]

[illegible]

Source: Own calculations based on SIRA data about reports on Nordic affairs 1975-1989 (data: BStU)
Layout: GeoLayout (mercator projection world map) [Gephi]

Step II: Data collection network by countries (Europe)

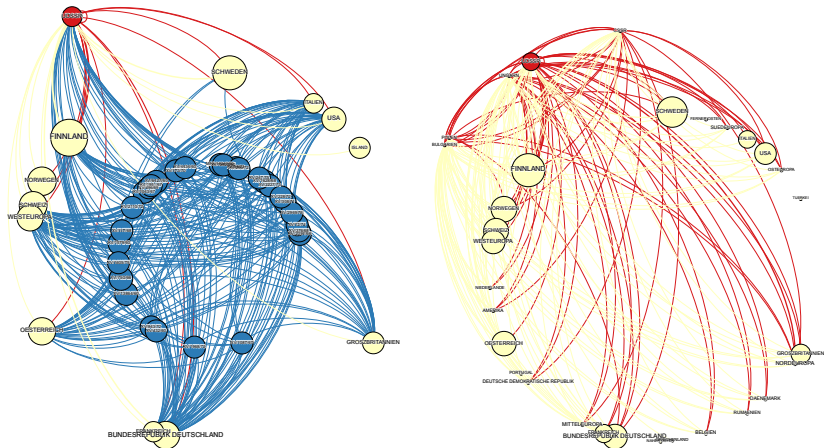


Source: Own calculations based on SIRA data about reports on Nordic affairs 1975-1989 (data: BStU)
 Layout: GeoLayout (mercator projection world map) [Gephi]

Step III: Dissemination by sources

Source: Own calculations based on SIRA data about reports on Nordic affairs 1975-1989 (data: BStU)
Layout: Group attributes layout (grouped by node type) [Cytoscape]

The Intelligence Cycle as a Network (filtered degree view)



Source: Own calculations based on SIRA data about reports on Nordic affairs 1975-1989 (data: BStU)
 Layout: Layered layout with 3 layers (LEFT: out-degree ≥ 50 , RIGHT: in-degree ≥ 50) [Gephi]

Concluding remarks

- East German foreign intelligence gathered intelligence from (almost) all regions of the world
- Reports on Finnish/Nordic affairs can be divided in two main categories:
 - Wider state reports (*Lageberichte*), often including several regions and/or issues/topics
 - Special reports on limited questions
- Reports were disseminated to a wide network both inside and outside the GDR
- Historical networks analysis can improve our understanding of the intelligence cycle in many ways, e.g.:
 - New possibilities to "connect the dots" from the data collection up to dissemination
 - Methods to analyse thematic structures and network topologies of the intelligence cycle
 - Dynamic networks can be used to analyse changes over time