WORKSHOP

Network Visualisations:

Starting points and questions

NOTE ON THE VISLAB

In the period of March 2026 to March 2028, we offer support to external researchers affiliated with KonKoop partner institutions and/or involved in their activities. For the authors involved in the KonKoop workshops, we provide drop-in consultation hours: Please contact us via M_Zuljevic@leibniz-ifl.de to schedule a one-on-one 30-minute consultation.

Leibniz-Institut für Länderkunde

Why?

Representing **nodes** (type, size, colour-code, position) and their relationships as **edges** (direction, type, or strength)

- Make visible complex relational structures
- Provide a basis for exploring patterns: observe centrality, betweenness, clusters, etc.
- Supports analytical questions: What relationships become visible through **patterns**? What drives these patterns? Who or what occupies **strategic positions**? What remains **outside** the network?

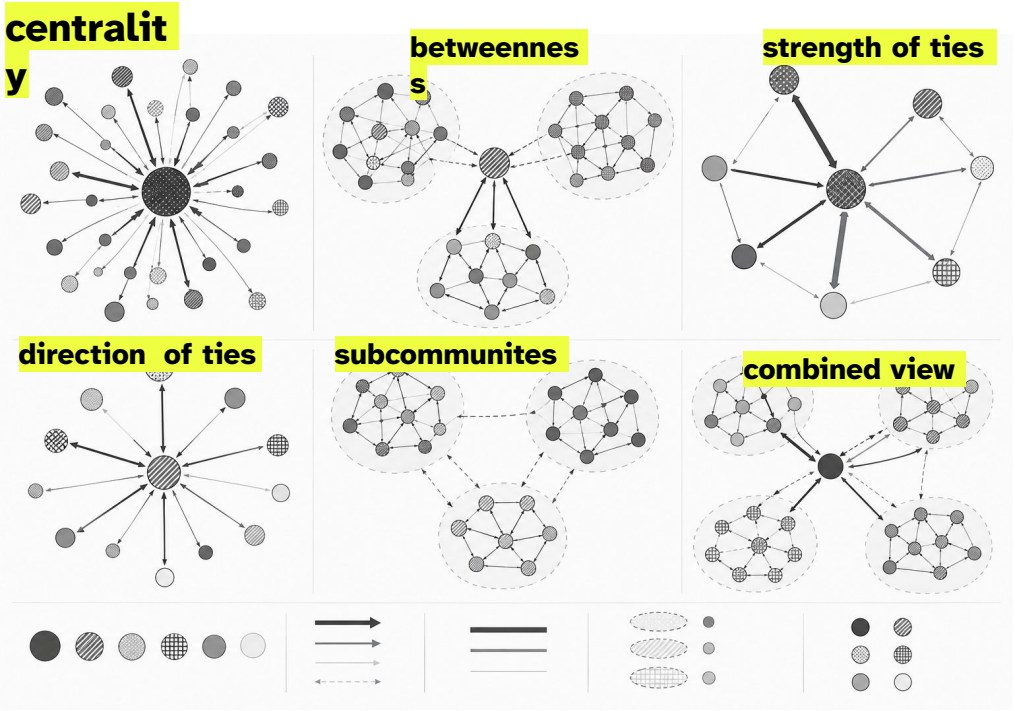
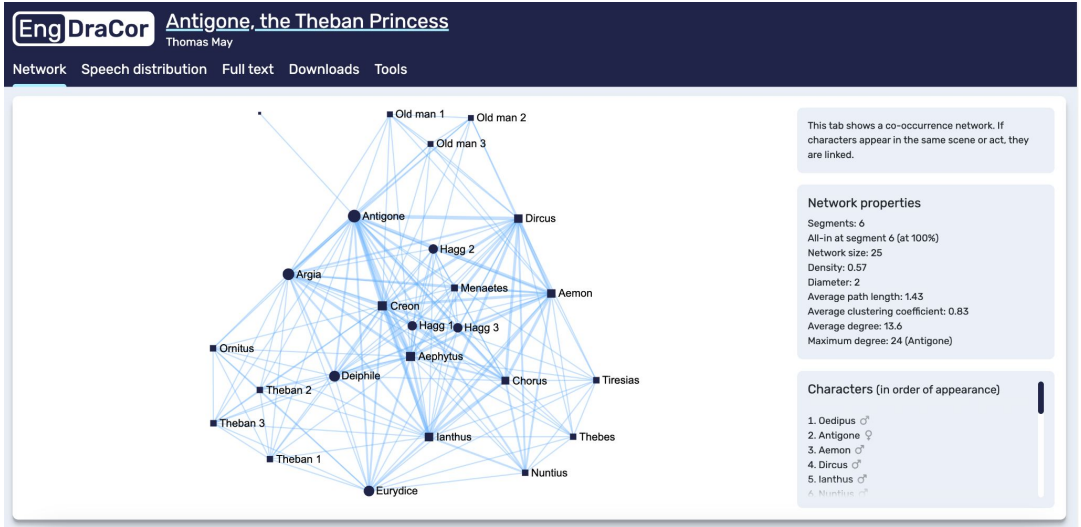
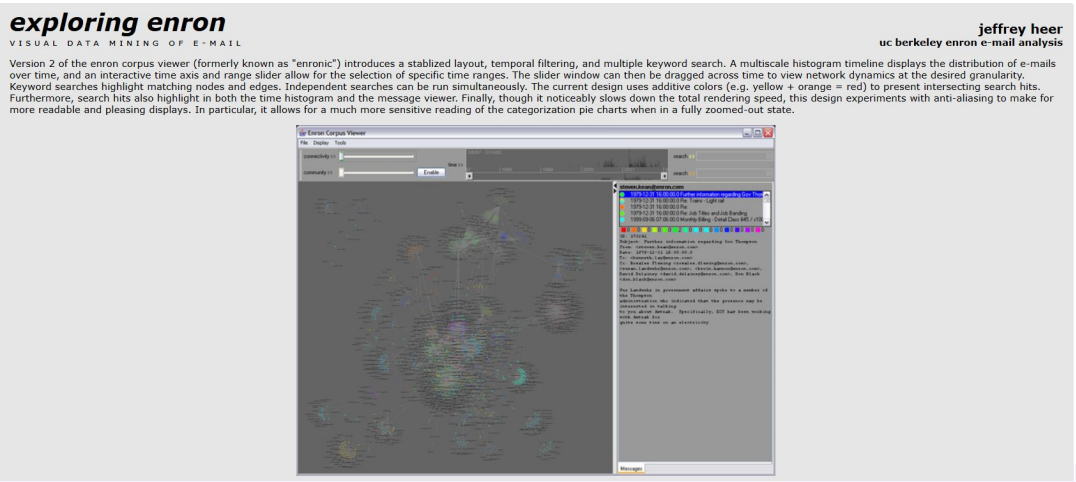


Image: ChatGPT



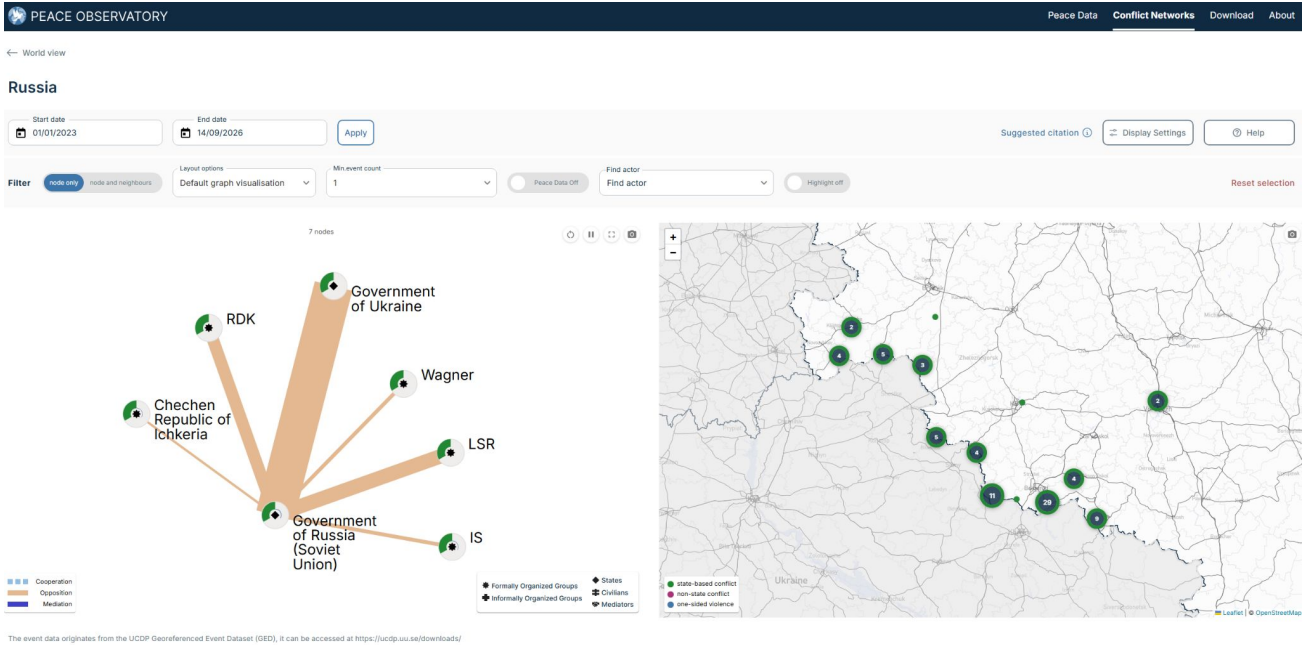


Network visualisation use in digital humanities to analyse texts and corpora (see e.g. Dracor.org)

Image up: Screenshot *DraCor* https://dracor.org/eng/may-antigone-the-theban-princess#. University of Potsdam.

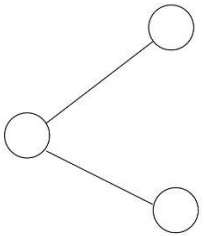
Image down: Screenshot *Exploring Enron*. https://homes.cs.washington.edu/~jheer/projects/enron/v2/. Jeffrey Heer.

Network Visualisation in Conflict Research / Peace Observatory (geospatial dimension)

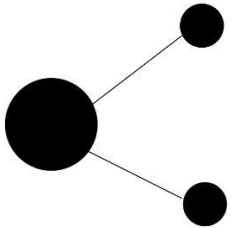


Screenshot [Peace Observatory: Conflict Networks](https://peaceobservatory.com/conflict-networks). Read more: Allard Duursma, Diana Steffen, Kit Rickard, Sascha Langenbach. 2026. The Conflict Network Explorer: a web-based tool for visualizing conflict. *Journal of Peace Research*, xjag056. https://doi.org/10.1093/jopres/xjag056 https://peaceobservatory.com/conflict-networks

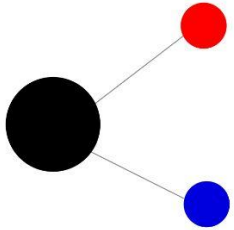
HOW? Nodes



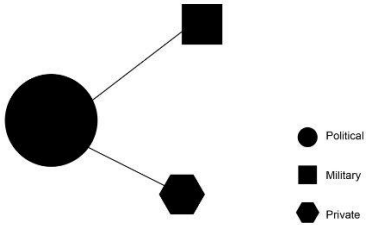
Position



Size

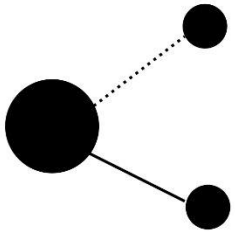


Colour

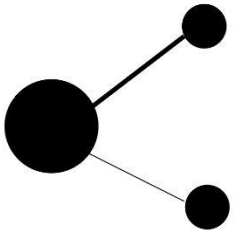


Shape

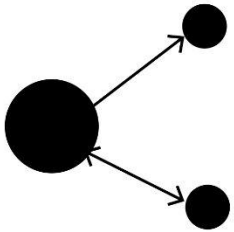
HOW? Edges and Centrality



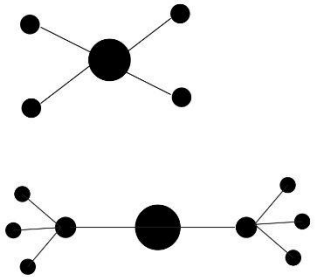
Type



Weight

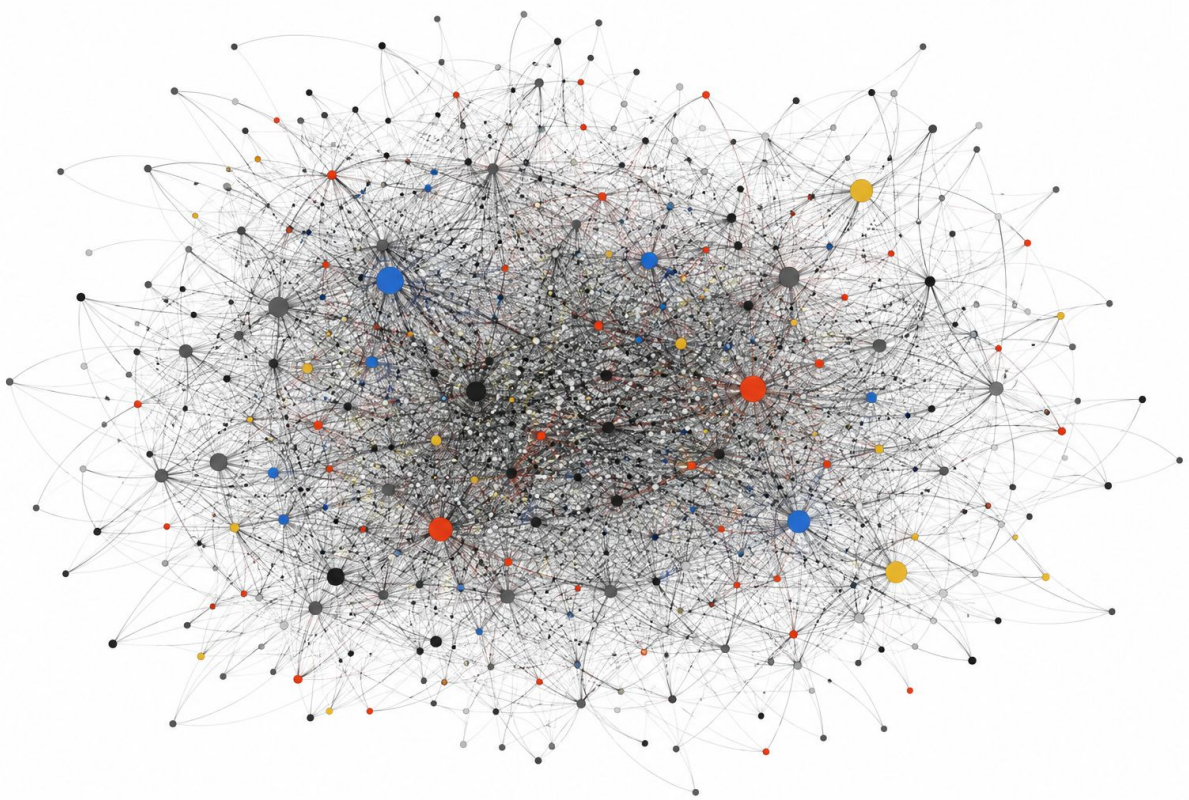


Direction



Centrality

Visual Network Analysis: Limitations and Critical Concerns



Network Visualisation has several limitations and concerns related to complexity, randomness of node positioning, lack of connections, visualisation of uncertain or incomplete data, and so on.

For example, if there are too many nodes involved, the result can appear like the hairball presented in the image on the left. Also, the analysis will be difficult to implement if there are too many nodes without connections or if patterns are too difficult to identify.

Image: ChatGPT

Geospatial Dimension

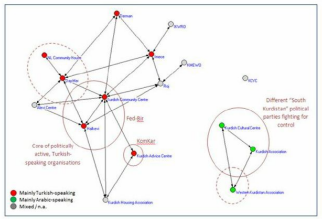


Figure 6. Sub-networks: linguistic groups and political affiliations.

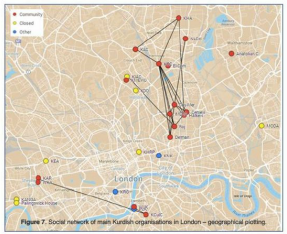


Figure 7. Social network of main Kurdish organisations in London – geographical plotting.

Figure 7. Social network of main Kurdish organisations in London – geographical plotting.

Screenshot: Paola Tubaro, Louise Ryan, Alessio d'Angelo. 2016. The Visual Sociogram in Qualitative and Mixed-Methods Research. Sociological Research Online, 2016. SAGE.

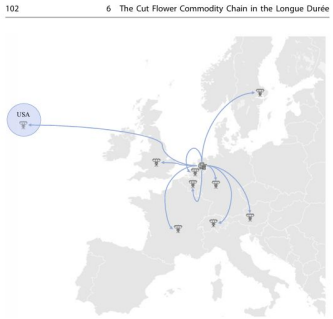


Fig. 6.18 Visualisation of the spatial structure in period III. (Own illustration)

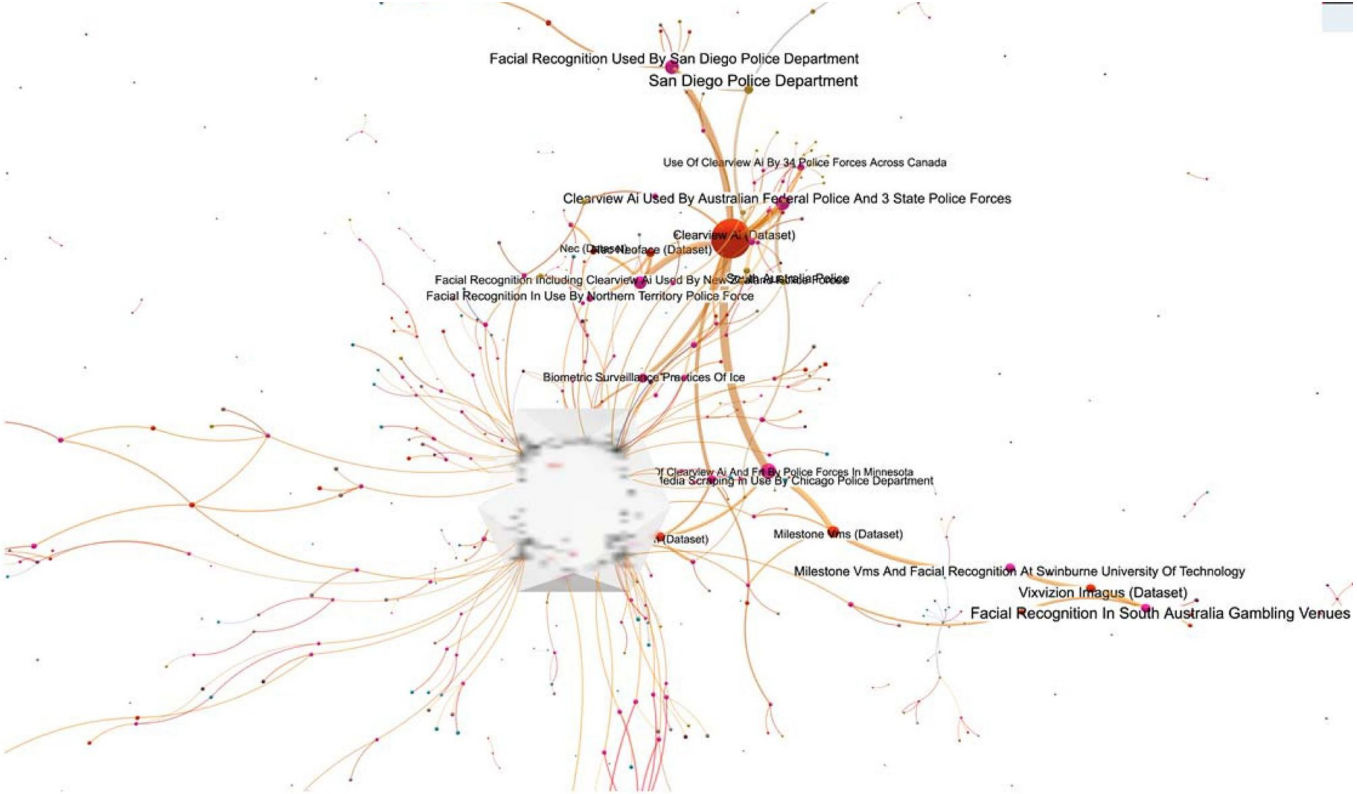
as France, increased (*Betuwe(Ch) Tuinbouwblad* 1965a). By 1973, the Netherlands accounted for 71% of global cut flower exports, with exports of flowers and plants worth over 700 million guilders. Italy, the second most important export country, lagged far behind with 14%. The Netherlands mainly exported to Germany (82% of cut flower exports). Other destinations included France, Switzerland, Scandinavia, Austria, Belgium, England and North America. In less than a decade, global exports of cut flowers increased by 175%. By the 1990s, the value of global exports had tripled to reach five billion euros. The Netherlands remained in the lead with a 60 per cent share. The most important markets for Dutch exports in the 1990s were Germany, the UK, France and Italy (van Lier 2005, 24).

Screenshot: Lara M. Espeter. From hobby to billion-dollar industry: Mapping the commodity chain of cut flowers in the longue durée. Springer VS. OA book.

Network visualisations can also incorporate geographical information or be combined with maps to examine where relationships occur, compare networks across spatial scales, and identify geographical patterns. If geographic dimension is important for your research, you can geocode the nodes so that visualisation can also result in network-maps.

Here are some examples of scholarly work which employ network visualisation with a geospatial dimension. This allows organising the network in relation to specific geography rather than an abstract space.

Visualising Uncertainty



Critical and creative strategies can be used to visualise also the uncertainties with data represented in a network visualisation. These strategies allow for acknowledging issues with data and lacking information within the visualisation itself. Here is an example of authors using a “white box” to signalise a part of the dataset marked by uncertainties.

Screenshot: Graph of the computer vision deployments in three-dimensional space. A white “black box” contains all unknown entities. In the interactive interface, the viewer can zoom in and explore the unknowns (Jo Kroese and Francesco Ragazzi).

Read more here: Francesco Ragazzi, Mapping as a Critical Making Practice in International Relations, Global Studies Quarterly, Volume 3, Issue 4, October 2023, ksad064, https://doi.org/10.1093/isagsq/ksad064

Critical aspects / Questions

Data and Sources

- Uncertainty: How to acknowledge it?
- Incompleteness: When is the network “complete”, what stays outside?

Analysis/Simplification

- To which level does the visualisation simplify or obscure through complexity?
- How is the position of nodes determined?
- Can you visualise some context to the data?

Critical Visualisation

- Use of (stereotypical) colours
- Sizing elements with care
- Practical issues with planning for print (color, readability)

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Questions for follow-up

- What would be the particular focal point of your paper which network visualisation could help bring forward? What visual mechanisms respond to these focuses? (e.g. placement of nodes, geospatial dimension, dynamic or uncertain connections, etc).
- What data and findings could be visualised to allow for comparison and shared discussion between the papers?
- What are your concerns with the dataset and its context? How can we acknowledge those through visualisation (e.g. uncertainty, incompleteness, contradictions, etc.)

VISLAB

Contact us via
M_Zuljevic@leibniz-ifl.de
to schedule a one-on-one
30-minute consultation.