"Issues with Europe: A Network Analysis of the German-Speaking Alpine Conservation Movement (1975–2005)"

Report on Research Design and Data Collection

LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

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CONTENT

I. Research Project

The research project *Issues with Europe: A Network-Analysis of the German-Speaking Alpine Conservation Movement* was designed as a trinational research project and carried out jointly by the University of Innsbruck, the Rachel Carson Center at the Ludwig Maximilian University of Munich, and the University of Basel.[1]

The project set out to explore the complex negotiation processes in European politics by analyzing European transport policy. More precisely, it aimed to examine the disputes over European Alpine transit policy between the 1970s and 2000s, with a comparative focus on Austria and Switzerland. Increasing the traffic volume of goods over the Alps led to the formation of civil activism at the two most heavily used Alpine border crossings in the 1980s: the Brenner Pass in Tyrol, Austria (subproject B), and the Gotthard Pass in Switzerland (subproject C). The citizens' initiatives protested the detrimental effects of traffic on people and the fragile Alpine environment. On the international political level, Austria and Switzerland engaged in talks and negotiations with the European Communities, whose transit traffic aggravated the situation. Eventually, bilateral transit agreements were concluded in 1992, a first milestone in the issue of transit traffic, which remains ongoing to this day (subproject A).

We were interested in assessing to what extent the regional anti-transit-traffic movements had an impact on policy decisions at the national and supranational levels and in exploring links within and between these levels. To this end, historical network research (HNR) and the associated network metrics were used as a tool[2] to supplement the qualitative historical analysis. Both approaches worked hand in hand: HNR raised issues that led to the development of further research questions for qualitative historical analysis, and the qualitative analysis referred to the HNR. Our understanding of HNR also encompasses a certain ludic quality best described by the neologism *thinkering*, a combination of *thinking* and *tinkering*.[3] The digital toolset was critically assessed with an eye toward

[1] Funding was provided under the framework of lead-agency projects by the state research funds of Austria (Leading House; FWF-Nr. I 3697-G28), Germany (DFG-Nr. 392198021), and Switzerland (SNF-Nr. 100019E_176479).

[2] "Sie [Netzwerkberechnungen] sind kein Ergebnis, sondern Werkzeuge, die bei der Interpretation historischer Begebenheiten helfen." Martin Stark, "Netzwerkberechnungen: Anmerkungen zur Verwendung formaler Methoden," in *Handbuch Historische Netzwerkforschung: Grundlagen und Anwendungen*, ed. Marten Düring, Ulrich Eumann, Martin Stark, and Linda van Keyserlingk (Münster: LIT, 2016), 155–71, here 171.

[3] In digital history research, *thinkering* has been used by the Centre for Contemporary and Digital History at the University of Luxembourg to describe the "playful experimentation with technological and digital tools" that characterizes their approach to history; see https://www.c2dh.uni.lu/thinkering.

building a model of the past following the guiding principle that "all models are wrong, but some are useful."[4]

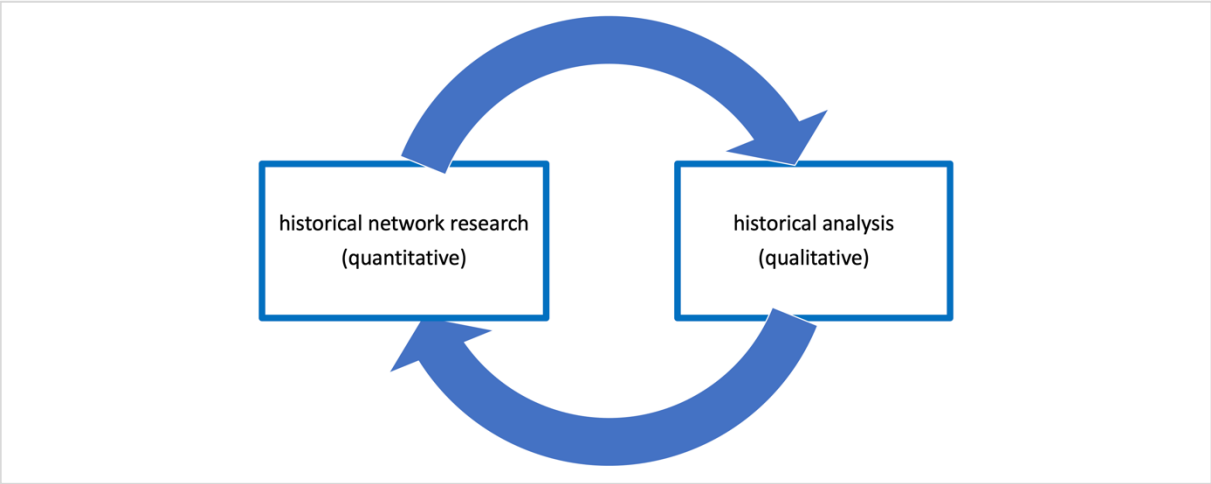

Figure 1 Iterative research project, using HNR.

Subprojects A (international politics) and C (Swiss civil activism) were able to draw on suitable serial sources to use HNR. The productive application of HNR on the Swiss case study can be found in Romed Aschwanden's dissertation, *Politisierung der Alpen: Umweltbewegung in der Ära der Europäischen Integration*, which was published by Böhlau in 2021.[5] Further publications from the research project are to follow. The underlying datasets were published on Open Data LMU. We thereby fulfilled our responsibility for transparency and made our data accessible for future research (FAIR principles).

The following pages provide an overview of the data model, detail the data collection and research process, and provide remarks on how to use the dataset. It is possible to recreate and adapt the study design for similar projects. For more information, please refer to our publications or contact the researchers directly.[6]

[4] G.E.P. Box, "Robustness in the Strategy of Scientific Model Building," in Statistics, ed. Robert L. Launer and Graham N. Wilkinson, *Robustness in Statistics* (New York: Academic Press, 1979), 201–36, here 202. Credit for citing Box in this context goes to Aline Deicke's presentation "What is Network Science?" at the 13th HNR Workshop (Mainz, 27 May 2019).

[5] Romed Aschwanden, *Politisierung der Alpen: Umweltbewegung in der Ära der Europäischen Integration (1970–2000)* (Cologne: Böhlau, 2021).

[6] A list of publications can be found on the project's website at https://www.uibk.ac.at/projects/issues-with-europe/publikationen-vortraege/index.html.en.

II. Data Model

To explore the networks in Alpine transit policy, we chose a *two-mode network*. Also known as a *participation network*, it establishes an indirect connection between *events* and *people*, who participate in the events.[7] The corresponding entity-relation model (ERM)[8] can be depicted as follows:

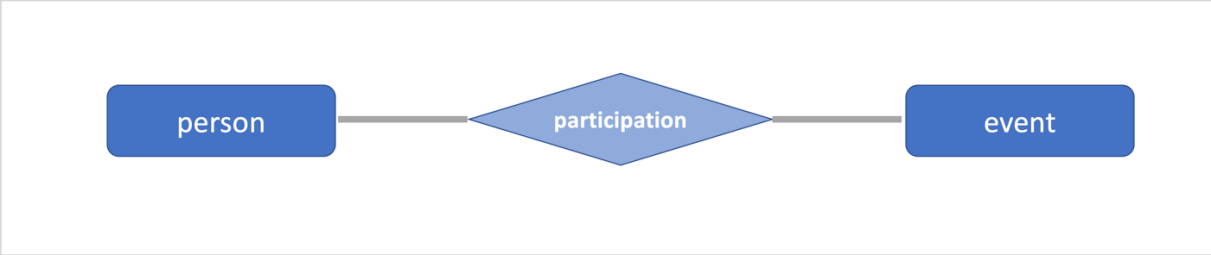

Figure 2 Basic ERM.

The ERM was expanded by adding attributes to the *person nodes* and *event nodes* (detailed in section IV). In accordance with the respective subproject's research interests and the available sources, additional attributes were collected.

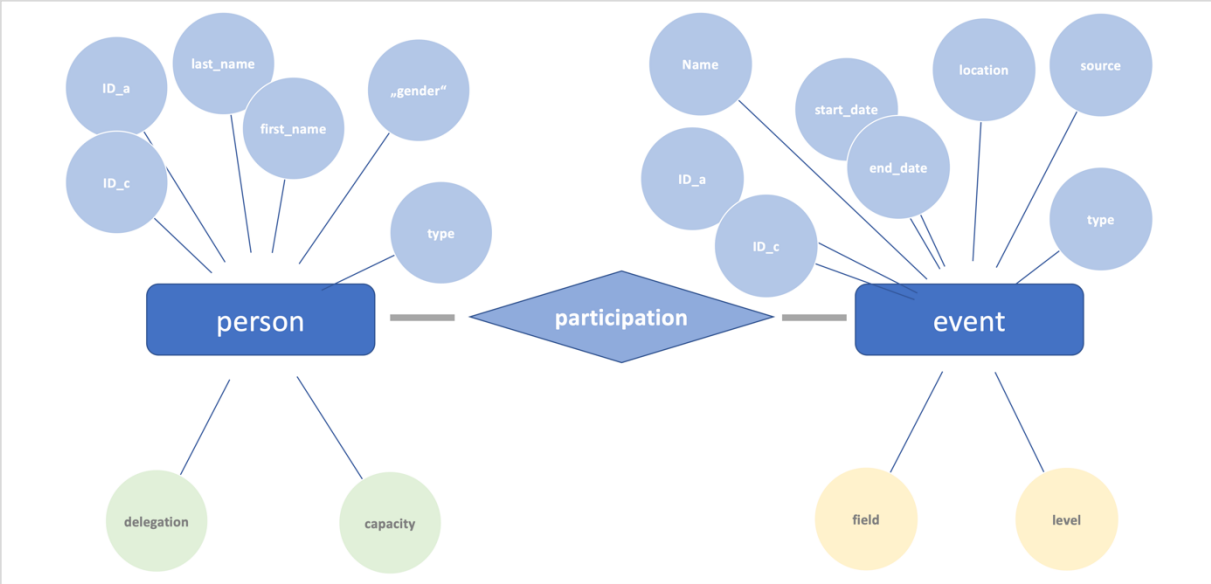

Figure 3 Expanded ERM: Attributes for subproject A in green; attributes for subproject C in yellow; attributes for both subprojects in blue.

[7] For our reasoning for choosing the two-mode network over other types, see Romed Aschwanden, Maria Buck, and Kira J. Schmidt, "The 'Swiss Alpine Conservation Movement' (1980–2005): Possibilities and Limitations of a Two-Mode Network," *Schweizerische Zeitschrift für Geschichte* 2 (2022): 92–109.
[8] Fotis Jannidis, "Grundlagen der Datenmodellierung," in *Digital Humanities: Eine Einführung*, ed. Fotis Jannidis, Hubertus Kohle, and Malte Rehbein (Stuttgart: J. B. Metzler, 2017), 99–108, esp 103.

III. Data Collection and Research Process

The process of data collection continued intermittently over a period of seven years (subproject A: 2018–2022, subproject C: 2016–2020). Archival and published materials were used as sources.

The sources for subproject A included:

- Arbeitsgemeinschaft Alpenländer (**Arge Alp**), online
- Bayerisches Hauptstaatsarchiv **(BayHStA)**, München (Germany)
- Bundesarchiv Koblenz (**BArch)**, Koblenz (Germany)
- Central Archives of the Council of the European Union, Brussels (Belgium)
- Historical Archives of the European Commission **(HAEC)**, Brussels (Belgium)
- Historical Archives of the European Union **(HAEU)**, Fiesole (Italy)
- Historical Archives of the European Parliament **(HAEP)**, Luxembourg (Luxembourg)
- Politisches Archiv des Auswärtigen Amts **(PAB)**, Berlin (Germany)

The sources for subproject C included:

- Privatarchiv Commission internationale pour la protection des Alpes **(CIPRA)**, Schaan (Liechtenstein)
- Privatarchiv Mountain Wilderness Schweiz (MWS), Bern (Switzerland)
- Privatarchiv Oberwalliser Gruppe für Umwelt und Verkehr **(OGUV)**, Brig (Switzerland)
- Schweizerisches Bundearchiv **(BAR)**, Bern (Switzerland)
- Schweizerisches Sozialarchiv **(SozArch)**, Zürich (Switzerland)

The research process can be described as follows: Suitable participation lists were identified in the collected sources. Then the information from the participation lists was put into the online database Nodegoat.[9] For visualization and network metrics, the open-source software Gephi was used.[10]

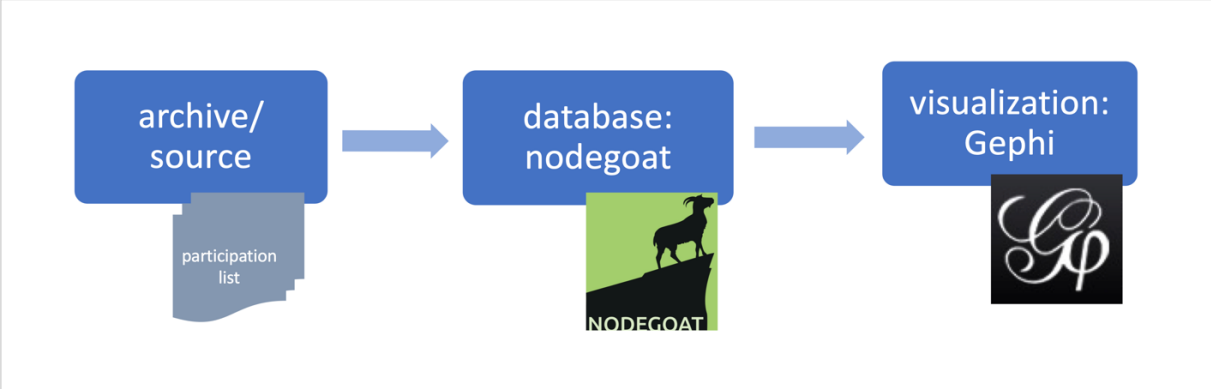

Figure 4 Research process.

[9] On Nodegoat, see Pim van Bree and Geert Kessels, "Nodegoat: A Web-Based Data Management, Network Analysis and Visualisation Environment," 2013, http://nodegoat.net from LAB1100, http://lab1100.com, accessed 7 September 2021.

[10] On Gephi, see Mathieu Bastian, Sebastian Heymann, and Mathieu Jacomy, "Gephi: An Open Source Software for Exploring and Manipulating Networks," in *Third International AAAI Conference on Weblogs and Social Media* 3, no. 1 (2009), https://doi.org/10.1609/icwsm.v3i1.13937.

The project's data is available on Open Data LMU in two different datasets:

– datasets from subproject A (nodes, edges)

– datasets from subproject C (nodes, edges)

Before publication, the entries in the database were checked, completed, and cleaned up with the help of two student assistants (July–December 2021). The datasets are provided as CSV files (comma separated values). As such, they can be imported into a variety of programs. The datasets are optimized for importing into Gephi and adopt the program's column headings. Gephi allows for projecting the two-mode network into a one-mode network, following the tutorial "K-Partite and Bipartite Graph (Multimode Networks Transformations)."[11]

[11] Matthieu Totet, "K-Partite and Bipartite Graph (Multimode Networks Transformations)," 29 January 2017, https://seinecle.github.io/gephi-tutorials/generated-html/k-partite-bi-partite-graph-en.html.

IV. The Datasets Explained

The following tables serve to further define and explain the datasets. The datasets evolved over seven years and were primarily intended as a tool in the research process. As is typical of historical data, the source material was incomplete and contained ambiguities. When necessary and possible, these gaps were filled, but no systematic effort was made to complete the datasets. Research notes were kept in the datasets if they were thought to possibly be of interest to future researchers.

The datasets contain different languages. The historical sources feature English, French, and German records. The researchers' main language is German, but to make the datasets more accessible, English terminology was adopted for descriptors. The tables below explain our data model in the Nodegoat database[12] and work as translation support.

Object type (node): Person

The node type "Person" includes all people listed on the participation list of an "Event". No attention was paid to differentiate between levels of assumed importance, e.g., excluding staff.

Object descriptions (subobjects)	Value type	Definition	Remarks
ID_a	String *unique*	Unique identification number for each person	Person nodes with this ID were originally collected by subproject A.
ID_c	String *unique*	Unique identification number for each person	Person nodes with this ID were originally collected by subproject C.
Name	-	Automatic combination of *last_name and *first_name	
last_name	String	Last name of a person	According to the source: errors possible
first_name	String	First name or initial of a person	According to the source: errors possible
gender	Reference: classification—Gender	[male/female/unknown]	The category was assigned based on the title in the source and/or first name.
type	String *default* *required*	[person]	Each person node was assigned the attribute "person" to enable network projection.
bio (optional)	Text	Biographical information found in other archival sources, publications, or online	Biographical information was not collected comprehensively.
delegation	Reference: object Type	Delegation as stated in the source	A person's delegation affiliation was often—but not necessarily—synonymous with their nationality. This information was collected exclusively by subproject A.
capacity acc. source	Text	Occupational title or official title of a person in attendance according to the respective source	This information was collected exclusively by subproject A.

[12] The following uses Nodegoat's terminology, which differs from typical network analysis.

Object type (node): Event

The node type "event" includes a wide variety of types of meetings, also of varying sizes and levels of formality, such as the biannual meetings of the European Conferences for Ministers of Transport with over 200 participants, state visits of single EU functionaries, and the "Alphornkonferenzen," almost monthly telephone conferences of activists from the Alpine initiative.

OBJECT DESCRIPTIONS	VALUE TYPE	DEFINITION	REMARKS
ID_a	String	Unique identification number	Event nodes with this ID were originally collected by subproject A.
ID_c	String	Unique identification number	Event nodes with this ID were originally collected by subproject C.
Name		Title of the "event"	The "name" of the event is either the title as stated in the source or was assigned by the researcher.
start_date	Date	Start date acc. to the source	
end_date	Date	End date acc. to the source	
location	(Subobject)	Place where the "event" took place (as indicated by the source).	
source	Text	Reference to the file in the archive or published source	For used abbreviations, see part III.
type	String *default* *required*	[event]	Each event node was assigned the attribute "event" to enable network projection.
notes (optional)	Text	This field contains research notes, e.g., additional information from the source (absentees) or notes on readability.	
field	String	All events where assigned a "field" according to the event's organizer: [Bewegung] = social movement [ExpertInnen] = experts [Politik] = politics	This information was collected exclusively by subproject C.
level	String	All events where assigned a "field" according to the event's organizer: [national] = national [europäisch] = European	This information was collected exclusively by subproject C.

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Due to data protection regulations, the data set was anonymized. To access the entire dataset for scientific research, contact University of Basel (sekretariat-geschichte@unibas.ch) or University of Innsbruck (geschichtswissenschaften@uibk.ac.at), specifying the purpose of use. Note that the research data are still subject to the respective data protection regulations.