



Käte Hamburger Kolleg  
Cultures of Research



Ana Bazzan with Alin Olteanu, Phillip H. Roth  
and Käte Hamburger Kolleg Aachen:  
Cultures of Research (c:o/re)  
RWTH Aachen University

## **c:o/re “Engineering Practices” Workshop: The Use of Networks in the Humanities and Social Sciences – Model, Metaphor, Method (30. May – 01. June 2022)**

**Location:** c:o/re, Theaterstr. 75 (Statdpalais), lecture room & online

Join workshop via Zoom:

<https://rwth.zoom.us/j/98453575697?pwd=VWJ1NndlNUh2UHUrTVlGdkdZVGJLQT09>

Meeting ID: 984 5357 5697

Passcode: 934562

### **Program:**

#### **Mo., 30.05., c:o/re lecture room & online**

13:45 Ana Bazzan (c:o/re Aachen, UFRGS)

#### **Introduction to the Workshop**

14:00 Claudia Wagner (RWTH Aachen, GESIS)

#### **“Studying Perception Biases with Social Network Data”**

People’s perceptions about the size of minority groups in social networks can be biased, often showing systematic over- or underestimation. These social perception biases are often attributed to biased cognitive or motivational processes. In this talk I will present work that shows that both over- and underestimation of the size of a minority group can emerge solely from structural properties of social networks.

15:00 Ana Bazzan (c:o/re Aachen, UFRGS), Silvio R. Dahmen (UFRGS)

**“History and Networks: 1. Detecting Communities and 2. Assessing the Role of Women”**

In this talk we discuss two applications of complex network theory to history: first we discuss how the use of gendered networks to assess the role of women in medieval narratives. As a second example, we show how the theory of structural balance may help detect communities in historical events where there are conflicting parties.

**Tue., 31.01., c:o/re lecture room & online**

10:00 Gwen Bouvier (Shanghai International Studies University)

**“Understanding coherence on social media hashtag-networks: intensive parenting on Chinese Weibo”**

In media and communications studies, one perspective on social media networks is how they have great potential to bring people together, to create communities across networks of hashtags, forums and platforms. Groups of people formerly isolated, fragmented or voiceless now have forums to share ideas, come together and be heard. Optimistic interpretations of this process see the potential for vastly increased civic participation, raising the democratic process.

Some studies, looking closer at some of these networks, suggest that beneath the surface there can be much less coherence. Feeds based on hashtags and forums can carry a range of views and interests, often linked by some kind of ‘affective’ moral binding, and where there is very little actual interaction and responsiveness to others. And such networks can be dominated and colonized by different levels of influencers.

In this presentation I look at a network of hashtags that seems at a more superficial glance to be highly coherent and integrated. These are parenting hashtags on the Chinese social media platform Weibo, where mothers seek out and share information and guidance on parenting. Some of the more popular posts can have a billion views. And in the corpus we collected, we found no instances of incivility, arguments, or even greater disagreement. This could, perhaps, be one such example of how social media provides a site for support and coming together.

Yet a closer look reveals that the sense of community or network here may be slightly different than it appears on the surface. The hashtag-networks

are dominated by influencers. And none of them seem to have any formal training or expertise in parenting. The presentation looks into what is driving these hashtags. What we see is that such hashtags may be better thought of in terms of how they colonize and shape our understandings of civic issues. And from a communications perspective, we cannot take for granted what a network or online community is.

11:00 Phillip H. Roth, Alin Olteanu (c:o/re Aachen)

**“Understanding Pandemics in an Age of Networks”**

We argue that the *network* has become a central medium through which we understand the world and society. One of the main reasons for this lies in how digital technology, through the Internet, configures contemporary communication into networks that are blind to previously established boundaries (political, economic, social, etc.). As a medium is invisible, its effects for processes of conceptualization and modeling easily pass unnoticed. Our argument implies that scrutinizing the affordances of network structures is critical for understanding the virality of contemporary communication and social dynamics. Pandemics are one example that reveals how the network is a ubiquitous model for culture and everyday life. Historically, the understanding of epidemics and pandemics was based on a conceptions of urban space and populations that could be isolated. A crucial feature of the networked society is the idea that everything is connected, and contagion becomes a general principle to understand the movement of flows. This shift in meaning also has dramatic consequences for public action in the face of viral outbreaks. We draw on different examples from the current coronavirus pandemic to illustrate how our understanding of pandemics (and of viable actions to counter them) have changed.

12:00 LUNCH BREAK

14:00 Sebastián de Valeriola (Université Libre de Bruxelles)

**Dealing with the Heterogeneity of Interpersonal Relationships in the Middle Ages: A Multi-Layer Network Approach**

[In this talk, we explore some of the challenges faced by historians using social network analysis when dealing with edges representing

interpersonal relationships of different types. To this end, we analyze a network modeling the Investiture Struggle in the diocese of Cambrai-Arras (c. 1100) by considering it as a multilayer graph and applying to it an automatic reconstruction method of the political parties involved. This technical context allows us to study in detail some modeling assumptions directly related to the diversity of the edge categories. More precisely, we address three questions: 1. the hierarchy of edge categories in terms of their usefulness for understanding the historical phenomenon under study; 2. the relevance of taking into account a certain type of "indirect" relations appearing in many historical networks; 3. the relevance of taking into account a hierarchy between the relations of the most important category.

### **Wed., 01.06., c:o/re lecture room & online**

10:00 Robert Gramsch-Stehfest (University of Jena)

#### **“Networks of clerics and scholars in 15th century Germany: New methods to collect and analyse data from Vatican Sources“**

One of the greatest challenges of Social Network Analysis (SNA) in Medieval Studies is the availability of sufficient network data of high quality. Another general problem is the cost-benefit-ratio of SNA studies. All too often it is very time consuming to gather network data from medieval sources by hand and to establish an appropriate network model of a given historical scenario.

In my talk I want to introduce into current research of a working group of medievalists and computer scientists in Jena (MEPHisto: “Models, Explanations and Processes in the historical sciences“, <https://www.mephisto.uni-jena.de/>), which deals with digital methods in historical research in general and actually focuses on the prosopography of late medieval clerical elites in Germany. Our aim the investigation of career patterns and personal networks of German clerics of the 15th century which are documented in the Repertorium Germanicum, a very large edition of source material from the Vatican Archive. In a first step, I will demonstrate, how modern technologies of Text Mining and Information Retrieval can facilitate the gathering of prosopographical and network data. In a second step I want to give a short overview over possible research topics and the explanatory potential of SNA to answer these questions.

11:00 Padraig MacCarron (University of Limerick) (via Zoom)

**“Identifying Opinion-Based Groups and Polarisation in Survey Data”**

[A survey can be represented by a bipartite network linking participants to their response to survey items. From this, we take a projection of the participants choosing an agreement threshold upon the items to link them. We apply this method to identify the formation of groups in the United Kingdom who became increasingly divided over public health guidelines at the beginning of the COVID-19 pandemic. Similarly we use it to show the increasing divide between Republicans and Democrats in the US from 2012-2002.

12:00 **CLOSING**