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Introducing the 'Ties that Bind'

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Introduction*

> "[…] interacting people engaged in actions that could alter and manipulate the institutions in which they participated."[1]

Nowadays, it is easy to be left with the impression that networks are ubiquitous. It seems that almost everyone is talking about (social) networks, as well as the demand for (and advantages of) being connected. This popularity has led media theorist Norbert Bolz to bemoan the all-encompassing power of networks: "Today, the divine is the network".[2]

Networks are booming in both everyday and scientific contexts and historians – as well as ancient historians – have not been unaffected by this development. Social network analysis approaches have found their way into historical research through the interest of historians in relationships, actor constellations, and action potentials. Methods and theories adapted from the social sciences have been applied to historical questions and source material. The increasing range of implementation and application possibilities of network-analytical approaches is also reflected in the thematic and chronological diversity of the studies published so far, which range from Ancient Egypt and the Ancient Near East to Late Antiquity . However, these case studies implement and apply the concept of network very differently, and do not refer to a uniform methodological or analytical concept beyond the search for and recognition of networks themselves. Thus, their approaches range from a purely metaphorical use of the concept through to the adoption of formal methods, quantitative analyses and visualisations of networks of different kinds.

It is the aim of this volume to reflect this diversity within the field of ancient history. This text is an attempt to concentrate recent and ongoing network research into ancient history. It is intended as a showcase publication, giving visibility to the various strands and avenues of research whose communality is

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1   BOISSEVAIN (1979), p. 392.
2   BOLZ (1996), p. 147: "Das Göttliche ist heute das Netzwerk".

that they take networks 'seriously', applying formal methods of analysis and re-interpreting sometimes well-known episodes or periods in ancient history through the lens of network research. In order to provide readers with a degree of thematic cohesion, the subject of ancient politics has been chosen as a general theme for this publication. Given the very nature of politics, in which (in ancient history as well as today) personal relationships and informal (as well as formal) networks play a significant role, its study lends itself especially well to the adoption of SNA methods.

This publication is the first attempt in English to introduce the advantages of network analysis to a wider audience of classicists and ancient historians. It covers all of ancient history, although – as is immediately obvious – it has a strong focus on Roman history and especially the history of the late Republic and early Empire, those periods of ancient history for which we have perhaps the greatest wealth of sources. Each individual article makes an original contribution to the research of ancient politics through the application of a formal social network analysis and / or using approaches derived from social network analysis, preferably to those aspects of political life which are difficult to approach via the more traditional research methods or where previous research (e.g. in prosopography) has laid the foundations for a deeper understanding through network theory.

The Science of Networks

Although the beginnings of network analysis date back to the 1930s (and in spite of its present popularity), historical network research is still a very young methodological field, albeit one that is steadily gaining traction among researchers. At its core, network research places front and centre the individual and the conditions of individual action in the context of social relations. Within the field of sociology, Georg SIMMEL was one of the first to decisively deal with the complexity of interpersonal relationships in his study *Soziologie, Untersuchungen über die Formen der Vergesellschaftung* (1908). For SIMMEL, sociology works as a kind of geometry of social relationships, concentrating on different forms of social life (formal sociology).[3] Society is thus conceived as an interaction among individuals, and it is the task of the science of society to describe the forms of this interaction, in its strictest and most essential sense:

> "Individuals see themselves initially in a context that, relatively indifferent to their individuality, binds them to their fate and imposes a close involvement with those things near to which the accident of their birth has placed them; and of course this initial context means the beginning circumstances of a phylogenetic as

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3   Cf. SIMMEL (1999), p. 83–85.

well as an ontogenetic development. But its progression then moves towards associative relationships of homogeneous components from heterogeneous circles. […] With further development, however, each individual weaves a bond to personalities that lie outside this original circle of association and instead possess a relationship to the individual through an actual similarity of dispositions, inclinations, activities, etc.; the association through superficial togetherness is more and more displaced by one of such substantive relationships."[4]

However, social network concepts were not only influenced by formal sociology, but also by – among others – social anthropology, the application of mathematical graph theory, sociometry, and social psychology. Foremost, it achieved its breakthrough as a social-science research program with the block model analysis of Harvard Structuralism in the 1960s and 1970s.[5] The concept of social networks offers various opportunities to describe, analyse, and visualise interpersonal interactions, viz.: by using the metaphor; through the use of its theoretical approach; or through its methodological approach.

Social network analysis propagates a certain perspective on social phenomena, especially on the structures of relationships: these structures function as an explanatory prism for social action and phenomena. The object of network analysis is thus the investigation of social relations between actors (represented as nodes), whereby the interpersonal connections and interdependencies (represented as ties) as well as the position of the actors in the network are of particular interest.[6] Social relationships and their structures thus become a unit of analysis in themselves. The basic unit here is the dyad, i.e. a pair of actors (*ego* and *alter*) depicted as nodes that can be linked to each other with ties.[7] A dyad is in turn connected with other dyads, through which more complex structures are formed. The main interest in this, naturally, lies in the why and how of actor interactions and in the consequences of observable network structures.[8]

These and other questions can be approached by the appropriate graphical representation of a network. In this way, an impression of certain important structural properties can be deduced relatively quickly: are all actors connected with each other? Are there isolates? Which actors are not linked with others, and why? Are there many or few relationships between individual actors? Are there

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4   SIMMEL (2009), p. 363–364.
5   On the development of network analysis, see e.g. SCOTT (1991); FREEMAN (2004); JANSEN (2006), p. 39–50.
6   Cf. BECKERT 2005, 286; cf. Haines 1988, 157–182.
7   Cf. HENNIG et al. 2012, 112.
8   Cf. HENNIG et al. 2012, 30.

clusters or subgroups that are strongly interconnected but hardly allow any external relationships? Do so-called brokers exist, mediators between two or more clusters that would otherwise have no connection with each other? These and other questions concerning connections, distributions and segmentations can be examined and explained with the help of certain key metrics like closeness, degree, betweenness centrality, density and reciprocity, which can be quantified and expressed mathematically.[9] These measurements compare nodes regarding their position and their meaning within the network, but they also analyse a network's structures, such as dyads, clusters, and subgroups. In this way, microstructures in a network graph can be identified, described, and interpreted.

By providing a systematic framework for the study of symmetries and asymmetries in social connections, social network analysis enables the identification of dynamic processes within these connections, of interdependencies and interactions, of forms of social organization and stratification. Network analysis can therefore be used, among other things, to record, identify, and visualise social relationships, to identify possible patterns and clusters, and to analyse their preconditions and consequences. Thus, it can also be used profitably in the historical sciences because the network concept and its analytical mechanisms not only look at a person's actions, but also at their scope for action, as well as their political, economic, and social circumstances. Furthermore, theoretical concepts such as that of social capital have deepened our understanding of exchange processes. How and why do network actors interact with each other in manner observed? What are the consequences of the network structure, for instance on the performance or extent of resource sharing?[10] Furthermore, the analysis of social relationships refers to social dimensions as diverse personal contacts and socially standardised practices. All this is possible because the network approach focuses less on the actors themselves than on the relationships between the actors. This view is based on a widespread assumption in the social sciences, namely that the building blocks of the social world are not individuals or groups but rather social relationships. Related to this fundamental assumption is the insight that most historical events and changes are considerably influenced by social structures, rather than historical individuals.

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9   For an overview, see e.g. HENNIG et al. (2012), p. 47–54; JANSEN (2006), p. 51–282; HAINES (1988), p. 157–182; FUHSE (2018), p. 39–174.

10 On the concept of social capital, see e.g. BOURDIEU (1983), p. 183–198; COLEMAN (1990); (1988), p. 95–120; BURT (1992); GRANOVETTER (1973), p. 1360–1380; LIN (2001), p. 3–28; PUTNAM (1993), p. 163–186. On the dualism of intentional action and surrounding formative structure, see KOCKA (1984), p. 171; KOSELLECK (1979), p. 144–158 and 203–206.

As previously mentioned, the concept of the social network is rather heterogenous, and thus offers a wide and diverse field of application in ancient history.[11] Firstly, the network concept can be used as a metaphor which enables us to pictorially describe different social dimensions and interactions, such as personal contacts or societal normalized practices. However, this form of metaphorical application is not pursued in this collection.

Rather, the central approach to social network analysis undertaken by the contributors to this collection is a formal and systematic examination of the relationships between the different actors. In contrast to the network metaphor, this has the advantage of defining and describing the relationships analysed in a more abstract form, thus enabling a more general comparability. Furthermore, the methodological approach of formal SNA offers the opportunity to evade the assumptions established within the source material or a research discourse and to view actor relationships from a largely (and hopefully) unbiased perspective. In addition, a formal analysis allows for temporal changes within the network to be made visible through 'before-and-after' comparisons, which can reveal subtle changes that would not necessarily be noticeable when simply conducting a (close) reading through source materials. However, visualizations do not only allow conclusions to be drawn about the network structures. A quantitative analysis of specific relationships also allows statements to be made about the significance of certain actor characteristics, as well as about individual actors. In addition, visualizations make it easier to identify the accumulation of certain types of relationships or attributes of actors within the subgroups of a network. At the same time, the statistical significance of the structures to be investigated can easily be contextualised in the overall picture of all relationships surveyed by considering, for example, temporal or local changes, as well as attribute distributions. The observed effect is thus far easier to reconstruct than with a pure description of a complex social network.

However, it should be made clear that social network analysis does not replace the traditional means of *Quellenkritik*, which is the central tenet of the historian and of particularly paramount importance to the ancient historian. Nevertheless, social network analysis offers a supplementary methodological and theoretical approach which promises new perspectives on a research field that is mainly dominated by more traditional prosopographical studies, while at the same time providing a powerful tool for analysing and visualising social and political connections in ancient societies. These advantages are particularly noticeable when SNA is combined with traditional tools of historical research. For this approach, the name Historical Network Analysis (or Research) has slowly established itself, which is distinct from both a purely metaphorical or

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11   Cf. e.g. REITMAYER / MARX (2010), p. 869–880.

theory-driven network concept and a sociologically influenced, non-historically-contextualising network analysis. The application of Historical Network Analysis is neither limited to specific epochs, nor to certain thematic questions. It provides indications and starting points for further interpretations, as well as offering new perspectives.

This Present Collection

The case studies collected here cover both Greek and Roman history, with an admitted focus on the latter. All the articles understand social networks as a theoretical concept which enables us to define and describe social relationships in a more abstract fashion, but also as a means of formal analysis of social relationships. They are characterised by the close connection of the respective, meaningful source material and its critical examination with the concept of social network and its analysis.

The ten articles are framed by a **prologue** and an **epilogue**. While this preface is meant to briefly explain the structure of the volume and the multi-faceted use of the concept of social networks, the prologue (written by Christian ROLLINGER) introduces readers to current research in the field of ancient Historical Network Analysis, attempts to identify common research frames and themes, engages with the methodological challenges that SNA poses for the ancient historian, and finally attempts to identify fields of future research. What it does not do – indeed, what it would now be impossible to do in a single article – is provide a *How to-Guide* for readers interested in attempting SNA themselves.[12] Given the broad diversity of available SNA software solutions and their continuing and rapid development, introductions to specific SNA applications would likewise be futile undertakings, particularly as all of these applications come with their own written instructions, reference books, and video tutorials.[13] Giovanni RUFFINI's epilogue not only summarises the individual case studies, but focuses on identifying the added value of the use of the concept of social networks for each chapter. It concludes with some general reflections on the advantages and disadvantages of adopting SNA in ancient history.

In her contribution "Athens as a small world", Diane CLINE deals with Athenian political life in the 460s and 450s, identifying Pericles' position within the social network of contemporary intellectuals, artists, politicians, and cultural creatives of the time. Her paper is a critical continuation of Edward COHEN'S much debated *The Athenian Nation* (2000), wherein COHEN argues the necessity

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12   For this, readers are referred to RUFFINI (2008), p. 20-40.

13   Readers can also consult historicalnetworkresearch.org for further online resources.

of face-to-face interactions in order to be called a *polis*.[14] While COHEN claims Athens was far too large to still be considered as a city-state at that point, CLINE uses the Small World concept and the Power Law effect to prove that face-to-face interactions for all are not a necessary or even realistic requirement. Diane Cline's paper combines a traditional critique of the source material with social network analysis, and is thus able to give a new perspective on previously examined source material. In doing so, her paper offers fresh input into a much-debated topic in ancient history.

In his paper on "Quintus Cicero and Roman rule – Networks between centre and periphery", Christian VOGEL considers Q. Cicero as a representative of the various forms of Roman rule (or hegemony). Quintus Cicero's governorships and military activities in *Asia* and *Gallia* represent different stages and situations of Roman rule, over various regions and cultures. VOGEL examines these with the tools of SNA, which allow him to compare these different types of rule and show their similarities based on the relations and communication between Romans and local elites. In this way, adapting the concept of cognitive (or social) balance to his needs, the workings of communication for agreements and conflicts concerning the maintenance of Roman supremacy over the Mediterranean become visible.[15] In this context, Christian Vogel discusses the benefits and obstacles that social network analysis must face within this study, and presents more general reflections on the application of social network analysis in ancient history, especially regarding structures of control and empires.

In her paper "Informal political communication and network theory in the Late Roman Republic", Cristina ROSILLO-LÓPEZ's analyses informal conversations between senators during the late Roman Republic through the lens of network theory in order to discern communication strategies and identify circulated information. Elite informal conversations (*sermones*) were ubiquitous in politics, and went beyond relationships of *amicitia*. Informal exchanges framed the way in which political deals were made; opinions were tentatively questioned; news was circulated. Roman senators eagerly awaited such exchanges, and were thus forced to 'network'. As such communication networks usually did not last long – only until the issue at hand was resolved – senators forged new alliances.[16] ROSILLO-LÓPEZ analyses these informal conversations between senators, with the help of social network analysis, in order to look for relevant nodes, liaisons, and information channels to understand how they

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14   Cf. COHEN (2000), p. 12–13 and 104–106.
15   Cf. ROLLINGER (2014); GRAMSCH (2013).
16   Cf. PERLWITZ (1992); PINA POLO (2010), p. 75–90.

functioned as an informal part of the political system. Her contribution offers a new perspective on the face-to-face-communication evident in letters.

The aim of Greg GILLES' paper "The political, social and familial networks discerned from Cicero's Letters during the Civil War of 49–47 BC" is to highlight affiliations discussed in Cicero's correspondence, using social network analysis (SNA) to map the connections between Roman senators at the time of the Civil War, as well as to determine if SNA is a useful tool for identifying whether these senators chose familial connections or political factions when deciding to support either Pompey or Caesar. As social network analysis produces an alternate perspective, where the attributes of individuals are less important than their relationships and ties with other actors within the network, its use here provides new insights and reinterpretations on the connections between the individuals discussed in these texts.

Wim BROEKAERT, in "The Pompeian connection. A social network approach to elites and sub-elites in the Bay of Naples", focuses on the composition and interaction of Pompeian elite and sub-elite networks, and how these relationships shaped and transformed local politics. It is his intention to approach this subject from a decidedly network perspective. This particular method provides a contribution to the ongoing debate over the composition and alleged stability or turnover within the Pompeian aristocracy. BROEKAERT analyses and compares the different networks in which members of the elites and sub-elites circulated, and how they attempted to use, share, extend, and manipulate these networks to attain their goals. The key to power, BROEKAERT argues, lies in manoeuvring oneself into the most interesting position in the network, either through mobilizing inherited connections, power and wealth or by carving out a new location by means of personal assets.[17]

Elena KÖSTNER, in her paper on the "Genesis and Collapse of a Network: The Rise and Fall of Lucius Aelius Seianus", investigates emperor Tiberius' notorious confidant during his time as *prefectus praetorio*. Seianus had built up a considerable network over the years; his exemplary career hit its peak in A.D. 31, when both Tiberius and Seianus held the consulship. But just a few months later this career was brought to an abrupt end, due to an alleged assumption: he is said to have planned to murder emperor Tiberius. This also meant the end of Seianus' life.[18] But the aftermath of Seianus execution also affected the members of his social network – information extracted from Tacitus' account of the

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17   Cf. TACOMA (2006); TÄUBE (2004), p. 29–52.
18   E.g. Dio 66.14.2; RUTLEDGE (2001).

persecution of Seianus' supporters, combined with an approach derived from social network analysis, show the network's structure, along with its collapse.[19]

"Networking in the early Roman empire: Pliny the younger" is the main focus of Fabian GERMERODT's article.[20] Living during the heyday of the Roman Empire, Pliny the Younger was part of the social and political elite of his time: he counted several emperors, fellow senators and equestrians as part of his social network in Rome and his native *Transpadana*. Letters were his principal means of staying in touch, and around 360 of Pliny's letters survive. Although these cover only a relatively short period of the last part his life (ca. 98–113/114), his *epistulae* give an insight into how social networks functioned in ancient Rome. GERMERODT reconstructs the individual network cliques, in which Pliny and/or his associates at times used their own political and social weight, or at others built political alliances in order to procure positions for themselves and their *amici*. GERMERODT thus uses social network analysis to help identify clients, brokers, and patrons, not only in each particular situation, but in Pliny's network as a whole.

In "Network management in Ostrogothic Italy. Theoderic the Great and the Refusal of Confessional Conflict", Christian NITSCHKE studies the societal structure of Ostrogothic Italy in late antiquity, and in particular Theoderic's role as a network manager.[21] He uses SNA to ascertain whether any active attempts at intervention on the part of the managing agent can be discerned that resulted in meaningful changes of societal (i.e. network) structures benefitting the managing agent. However, NITSCHKE argues that past societies or even individual actors were not automatically conscious of these societal structures, nor of the effect of their own actions. Actions that were intended to be limited, local interventions could very well exert influence on a much larger scale, even if actors and participants were not aware of this. In any case, it is scarcely imaginable that a society such as Ostrogothic Italy, or indeed its most far-sighted ruler, could envision the complex multitude of possible consequences, or the vast interconnected spheres of cause and effect, for the entire structure of society.

Johannes PREISER-KAPELLER's contribution, "The ties that do not bind – Group formation, polarisation, and conflict within networks of political elites in the medieval Roman empire", aims to explore the concepts and methods of network and complexity theory as well as New Institutional Economics (NIE) to

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19   Cf. Tac. *ann*. 5.6–9; 6.2–10.
20   Cf. GERMERODT (2015).
21   Cf. NITSCHKE (2014), p. 87–117.

analyse the emergence of conflicts within ruling elites in pre-modern polities.[22] The general structural weakness of pre-modern formations of power, it is argued, may influence natural states when dramatic adjustments occurred (e.g. partial or complete breakdowns of the dominant coalition, or civil war, rather than legal adjustments).[23] This assumption is tested against a comparative analysis of the structural and qualitative properties of elite networks, as well as their temporal and spatial dynamics. The modelling of the relational web among elite members offers a micro-perspective on the evolution and resilience of networks between actors within smaller groups and clusters in situations of conflict. Furthermore, it permits a quantification of the size of the conflicts within elite networks, and an analysis of their temporal dynamics. The article demonstrates the benefits of applying these tools to ancient and medieval source evidence, as well as their explanatory value for a new conceptualisation of elite dynamics and intra-polity conflict under pre-modern conditions.

The case studies that make up this collection are thus as multi-faceted and diverse as the concept of social networks and Greco-Roman antiquity itself. Collectively, they argue for a significant added value of using the concept of social networks, not only as metaphor but as a formal method for analysing, describing, and visualising social, political, financial, and other relationships in the study of the ancient world. It is not the aim of this book, or of its case studies, to replace traditional tools used in ancient history. Rather, it is meant as a plea for the continued and increased use of social network analysis as a supplementary heuristic method, as an *instrumentum studiorum*, which can help to provide a new perspective on previously known subjects.

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22   This is partly based on the approaches and results of a project entitled "Mapping medieval conflicts: a digital approach towards political dynamics in the pre-modern period (MEDCON)"; see http://oeaw.academia.edu/MappingMedievalConflict (last accessed on 17 July 2017).

23   Cf. North / Wallis / Weingast (2009), p. 35–36; 40; 51.

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