

9th Conference on Applications of Social Network Analysis (ASNA)

Applications of New Techniques of Data Gathering and Statistical Analysis for Social Networks

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Social Network Analysis (SNA) has its origins in psychology, statistics and mathematics and, apart from these “founding disciplines”, is applied in as diverse disciplines as sociology, management sciences, epidemiology, economics, and political science. Contrary to other analytical tools that mainly concentrate on attributes of cases for the explanation of given phenomena, SNA focuses on network relations between cases. A central assumption of SNA is that these relations and interdependencies matter for the explanation of individual or collective behaviour and outcomes. SNA provides powerful tools for the description and illustration of network structures and has for a long time been successfully applied to that purpose. In recent years, SNA has attracted an increased interest among scholars and has gained prominence through major publications. Two reasons account for this evolution: first, the development of statistical models for network data has increased the number of methodological techniques network data can be analysed with. Indeed, the main strength of SNA, i.e. its focus on interdependencies among cases, has been (and still is) a major challenge for statistical analysis, which ideally relies on independent observations. Second, network data is increasingly available to scholars, as new methods of data gathering and sources for “big data” networks become available. This is particularly true with respect to data on relations among individuals that can be grasped relying on new social media.

The Conference on Applications of Social Network Analysis (ASNA) tries to take stock of these rapid developments. Its 9th edition took place at the University of Zurich on September 3 - 7, 2012. The conference has the goal to assess the state of the art and discuss current developments in social network research. It provides an interdisciplinary venue with a focus on applications of SNA, but without limitations with respect to scientific disciplines and research questions. It aims at providing a unique platform to young as well as senior scholars from all over the world for the exchange of experiences and presentation of their work in relation with the methodological developments and newest applications of SNA. Starting as a rather small conference for mainly Swiss scholars, during the course of its last eight editions ASNA became an internationally recognized event for social network analysts. In 2013, ASNA is going to celebrate its 10th anniversary.

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Besides around 60 presentations and several workshops on the most recent methodological developments in the field, ASNA has traditionally been welcoming leading SNA-scholars as keynote speakers. In 2012, we were happy to have Dirk Helbing (ETH Zurich, Switzerland) and John Skvoretz (University of South Florida, USA) at the conference. Dirk Helbing gave a talk about his major project “FuturICT - Global Participatory Computing for Our Complex World”. The ultimate goal of the FuturICT flagship project is to understand and manage complex, global, socially interactive systems, with a focus on sustainability and resilience. John Skvoretz is currently the president of the “International Network of Social Network Analysis (INSNA) and talked about attraction and repulsion as drivers of interethnic and intergroup relations. Both keynote presentations thus nicely highlight the diversity of potential conceptual and empirical applications of SNA.

About half of presentations at ASNA 2012 were full paper presentations eligible for inclusion in the conference proceedings. The articles in this issue represent a good sample of the different disciplines and methodological approaches that ASNA aims to bring together. More specifically, it covers the fields of economic networks (Elaouer-Mrizak & Chastand; Ramirez), friendship and school networks (Ruggieri et al.; Hayashi & Kryssanov; Oloritun et al.; Huszti et al.), professional networks (Kegen), political networks (Mikulskiene & Pitrenaite - Zileniene), and semantic networks (Drieger).

A first group of papers presents and tests innovative techniques for network data gathering. Philipp Drieger’s paper makes an interesting methodological contribution by introducing a method for visual text analytics to support knowledge building, analytical reasoning and explorative analysis. Drieger aims at analysing semantic network models that are automatically retrieved from unstructured text data. The paper by Rahman O. Oloritun, Anmol Madan, Alex Pentland and Inas Khayal is also strongly focused on new methods to gain network data. It presents how mobile technology enables the measurement of complex systems of interactions, which then explain friendship ties. Also Yugo Hayashi’s and Victor Kryssanov’s work relies on mobile devices and internet chat systems. In a controlled experiment setting, the authors analyse how trust develops over time and depends on the opinion expressed by others. The article by Éva Huszti, Beáta Dávid and Kinga Vajda not only presents a new method of data gathering relying on a contact diary, which allows collecting data on egocentric networks. It also further refines the continuum of categories between strong and weak ties and presents its use in a comparison of two population networks in Hungary.

A second group of papers highlights the use of statistical methods and methods of illustration for the analysis of social networks. Nadine V. Kegen’s paper analyses the formal and informal networks of scientific collaboration and asks what role gender homophily plays in fostering these networks. She applies a Quadratic Assignment Procedure (QAP) for detecting network correlation on the principal investigators of two institutions from the German Excellence Initiative. Sana Elaouer-Mrizak and Marc Chastand apply community detection algorithms to the French intercorporate network. The authors detect strong communities due to overlapping memberships in companies’ boards of directors and explain this by the need of companies to coordinate and access resources. Ana Ramirez focuses on professional collaboration within social networks on farmers’ decision-making behaviour when adopting irrigation technology. A dataset covering five consecutive years allow the author to detect that technology is transferred either through tenant or kinship relationships among farmers. Sabrina Ruggieri, Thomas Friemel, Fabio Sticca, Sonja Perren and Françoise Alsaker examine whether defenders of victims of school bullying befriended similar peers, and whether the similarity is due to selection or influence processes or both. Based on longitudinal data of 478 Swiss school students and employing actor-oriented stochastic models, their analyses show that similarity in defending behaviour among friends was due to selection rather than influence. Finally, the paper by Birute Mikulskiene and Birute Pitrenaite-Zileniene analyses the policy network of public management and interest representation in Lithuania. Comparing two points in time, the authors are able to detect an increase of participation of public managers and stakeholders over time.

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