

Networks in the Global World – 2022

Structures over Time:

Relational Dynamics in European Societies and beyond

Programme and Abstracts

ORGANISER:

Centre for German and European Studies



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CONFERENCE CONCEPT

The primary goal of the 'Networks in the Global World' conference series is to bring together networks researchers from around the globe, to unite the efforts of various scientific disciplines in response to the key challenges faced by network scholarship today, and to exchange original research results—thus enabling analysis of global social processes as well as theoretical and methodological advancements.

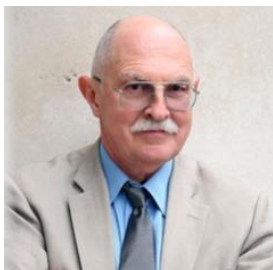
NetGloW series took off in 2012, with the conference subtitled “Structural Transformations in Europe, the US and Russia”, and hosted researchers, political practitioners and business representatives from all around the world to highlight the challenges catalyzed by the growing importance of networks in the world and to reflect on these societal transformations. The 2014 event mainly focused on linking theoretical and methodological developments in network analysis. NetGloW'16 thematically revolved around relations between diverse networks. In 2018, the main conference topic was devoted to the principles bringing to life various kinds of networks, dealing with the logics and mechanisms that generate network structures—in Europe and around the world. NetGloW'20 discussed networks in their situational, cultural, historical, institutional, temporal, spatial, and professional contexts, and how these contexts mold understanding of relations and, thereby, of particular networks.

The main theme of NetGloW in 2022 is concerned with time, would it imply change of network structures over time, certain historical points when networks occur, relational stories endowing links and networks with meaning, or other related issues. In line with its tradition, the conference engages dynamics of different kinds of networks, whether they connect persons, symbolic elements, material things, organizations, social institutions, political entities, or other types of nodes. The event also seeks understanding of relational dynamics between networks of different kinds. We are equally curious to look into network change throughout the development of personal trajectories, relational dynamics in dyads, or at the whole-network level. We are interested to understand the meaning of change in the context of a particular historical time or to look for the fundamental principles of change in typical relations, such as friendship or power. The participants are welcome to propose new theorizations of time in network analysis, offer new methods to test theories of network change, or come up with applications to new data. Archive-based data on networks of the past, longitudinal, and time-stamped data are particularly welcome, especially those revolving around European societies. In addition, the conference not only questions how network structure changes, but also how individual, dyadic, and whole-level perceptions of specific relations and whole networks change over time, alongside with the change of network structure. Accordingly, both methods capturing change interpretively and those relying on formal and statistical inquiries are welcome, especially mixed methods striving at finding the fundamental principles of network dynamics together with the corresponding network patterns while understanding the meaning of these principles and patterns in broader socio-cultural contexts.

The core subject areas of the NetGloW conference series remain the same in 2022, as well as the overall approach: The focus on advances in network analysis combining different types of methods and data to address the challenges in studying various kinds of networks, compared across cultures, societies, states, economies, and cities, — with a primary focus on European societies. Like before, a particular emphasis is on linkages between theory, method and applications, considering how theory-driven principles can be tested and which settings are suitable for such investigations. The conference will offer a coherent set of sessions and workshops corresponding to this overall approach. Simultaneously, once more NetGloW invites proposals from the community of network scholars on sessions and workshops they would like to bring to the conference, both in line with the proposed main topic and in addition to it.

01 // KEYNOTE AND INVITED SPEAKERS

KEYNOTE SPEAKERS



**Randall
Collins //**

University of Pennsylvania

Randall Collins is Professor of Sociology Emeritus at University of Pennsylvania. His books include *The Sociology of Philosophies: A Global Theory of Intellectual Change* (1998), *Interaction Ritual Chains* (2004), *Violence: A Micro-sociological Theory* (2008); a sociological novel, *Civil War Two* (2018); and *Charisma: Micro-sociology of Power and Influence* (2020). Most recent is *Explosive Conflict: Time-Dynamics of Violence*, published in 2022. His current project is on the sociology of creativity in music.



**Betina
Hollstein //**

University of Bremen

Betina Hollstein is Chair of Sociology at the University of Bremen and directs Qualiservice, a national data center for qualitative social science research data. She received her doctorate degree at Freie Universität Berlin and worked at Ludwig-Maximilians-Universität Munich, Universität Mannheim and Humboldt Universität Berlin, before she was appointed as professor of sociology at Universität Hamburg (2009–2014) and Universität Bremen (since 2014). Betina Hollstein's work is centered around personal networks, social inequality and methods of network research. She is especially interested in understanding network dynamics across the life course and network effects such as changes in personal networks after the loss of the spouse or how personal networks affect the transition from school to work. With respect to such questions, she combines the structural network approach with more actor-centered aspects, looking at how network resources and social capital are activated and how network practices differ between social groups. In studying network processes and mechanisms, Betina Hollstein champions the use of qualitative approaches (e.g. 2011, in Scott and Carrington's Sage Handbook of Social Network Analysis) and mixed methods research designs (2014, Cambridge University Press, ed. with Silvia Dominguez). Current projects tackle visual methods for network data collection and innovative combinations of qualitative methods and computational social sciences.



Daniel A. McFarland //

Stanford University

Daniel A. McFarland is a Professor of Education and (by courtesy) Sociology and Organizational Behavior at Stanford University. His training is in sociology and philosophy with degrees from the University of Chicago. He teaches courses at in Social Network Analysis, Sociology of Science, Computational Sociology, Relational Sociology, Education Data Science, and the Sociology of Play and Games. His research spans a wide assortment of topics like social network dynamics and visualization, micro-foundations of relations, student resistance and social change, and the diffusion of knowledge innovations. You can learn more about Dan [here](#).



Ulrik Brandes //

ETH Zürich

Ulrik Brandes is professor for social networks at ETH Zürich.

His background is in computer science with a Diploma degree from RWTH Aachen and a PhD from the University of Konstanz. After his habilitation in 2002 he became associate professor at the University of Passau in the same year, and professor for algorithmics at the University of Konstanz one year later. He is vice-president of the International Network for Social Network Analysis (INSNA), coordinating editor of *Network Science*, and on the editorial boards of *Social Networks*, *Journal of Mathematical Sociology*, *Journal of Graph Algorithms and Applications*, and *Computer Science Review*.

His main interests are in network analysis and visualization, with application to social networks in particular. He is a co-author of the *visone* software for network analysis and the *GraphML* data format. Following a DFG-funded Reinhart Koselleck-Project (2011–2017) on *Social Network Algorithmics*, he takes a shot at improving the methodological foundations of network science. As a principal investigator in the ERC Synergy Project NEXUS 1492 (2013–2019) he was working on reconstructing archaeological networks from fragmented and heterogeneous observations. Currently, he is increasing his involvement in soccer analytics.

INVITED SPEAKERS



**Jan
Fuhse //**

Humboldt University of Berlin

Jan A. Fuhse is an interim professor of sociology at Chemnitz University of Technology, Germany. After his PhD in sociology from Universität Stuttgart (Germany) in 2007 he completed a post-doc (funded by the Alexander von Humboldt foundation) at Columbia University 2007-2008. There he worked with Harrison White and Charles Tilly on the theory of social networks. From 2009 to 2013 he was an assistant professor of political sociology at the University of Bielefeld, completing his Habilitation in 2011. From 2013 to 2018, Fuhse worked as a Heisenberg Fellow (funded by the German Research Association) at Humboldt University of Berlin, Germany. His research focuses on communication and meaning in social networks, on social networks in inequality and interethnic relations, on constellations in political discourse, and on the theory of computational social science.

Recent publications: *Social Networks of Meaning and Communication*, (OUP 2022), "Analyzing Social Networks in Communication: A Mixed Methods Study of a Political Debate" (forthcoming in *Quality & Quantity*) "How Can Theories Represent Social Phenomena?" (forthcoming in *Sociological Theory*). "Networks from Culture: Mechanisms of Tie-Formation Follow Institutionalized Rules in Social Fields" (forthcoming in *Social Networks*, with Neha Gondal), "Relating Social and Symbolic Relations in Quantitative Text Analysis. A Study of Parliamentary Discourse in the Weimar Republic" (*Poetics*, 2020, with Oscar Stuhler, Jan Riebling, and John Levi Martin).



**Ina
Hellsten //**

University of Amsterdam

Ina Hellsten is an associate professor at the Corporate Communication program group of the Amsterdam School of Communication Research, ASCoR. Her research focuses on the dynamics of communication networks, in particular in social media settings. Previously, she has held positions as a post-doctoral researcher at ASCoR, researcher at the Royal Dutch Academy of Arts and Sciences (KNAW), and an assistant and

associate professor at the Vrije Universiteit Amsterdam. Her work has been published in communication sciences (e.g. in *Science Communication*, *New Media & Society*, *Journal of Computer-Mediated Communication*) and in information sciences (e.g. in *JASIST* and *Internet Research*).



Camille Roth //

Centre Marc Bloch, Berlin

Camille Roth has been holding a research professorship at CNRS since 2008 (“chercheur CNRS” i.e., tenured without teaching duties) in computer science while he also had a couple of tenured university positions in sociology, at Sciences Po as Associate Professor (“professeur”, 2016–2018) and in Toulouse as Assistant Professor (“maître de conférences”, 2007–2008). His research thus lies at the interface between social and computational sciences, featuring keywords such as socio-semantic systems, social cognition, algorithms and mathematical sociology.

He founded in 2012 and currently leads the computational social science team at Centre Marc Bloch in Berlin (CNRS/Humboldt) and currently supervises a team of several doctoral and post-doctoral researchers. He is currently the recipient of an ERC Consolidator grant called Socsemics on socio-semantic networks and over the past decade has been global or local PI for several multi-institution research projects, both at the French and European level, on blog networks, scientific communities, and peer-to-peer platforms, including Webfluence, Algopol and Algodiv (on informational dynamics of the digital public space) and QLectives (EU IP on quality collectives in socio-technical communities). He has authored more than 60 peer-reviewed publications. He is also an associate member of CAMS (Centre d'Analyse et de Mathématique Sociales, CNRS-EHESS).



Johan Koskinen //

University of Melbourne

Johan Koskinen is Senior Lecturer In Social Network Analysis at the Melbourne School of Psychological Sciences, University of Melbourne. He was awarded his PhD in Statistics from Stockholm University and then has worked at the universities of Stockholm, Oxford and Manchester. Johan has contributed to the development of a number of statistical models and inference procedures for social networks, in particular exponential random graph models (ERGM) and stochastic actor-oriented models (SAOM).



Elisa Bellotti //

University of Manchester

Elisa Bellotti is a senior lecturer of the Department of Sociology at the University of Manchester, member of the Mitchell Centre for Social Network Analysis, and associate editor of *Social Networks* journal. Before arriving in Manchester in 2008, Elisa worked as research fellow at University of Turin and University of Bozen, Italy. She completed her Ph.D in Sociology and Methodology of Social Research in 2006 at Catholic University of Milan. Elisa Bellotti studies social networks and how they shape and are shaped by our social environment. Topics she commonly investigates are gender, science, criminal networks, personal relationships, mixed methods. Previously she also studied consumption, and she is developing an interest in health networks.



Peng Wang //

Swinburne University of Technology

Dr Peng Wang is a network methodologist who specializes in the development of statistical models for social network analysis. With a combination of skills in computer science, mathematics and statistics, and social network theory and analysis, Dr Wang has detailed understanding of the advantages of exponential random graph models (ERGMs) for social networks, as well as the challenges that need to be overcome. Collaborating with world renowned leaders in the field of social network analysis, Dr Wang personally contributed to the advance of ERGMs in model specifications, methods for simulations and estimations techniques, computational efficiency and model robustness, and model interpretations and empirical implications. Dr Wang developed the PNet software package for the simulation and estimation of ERGMs. The PNet software serves as an essential part of the SNA research team in Melbourne—MelNet, as well as the general SNA community. Dr Peng Wang's work contribute to the development of ERGMs and PNet into cases of bipartite, multivariate, longitudinal, nodal attribute based and multilevel network models, with methodological developments on model specifications, conditional estimations on snowball sampled network data, models with missing network data, and models for large networks. He has publications in the fields of Management, Social Ecological Systems, Networks among Adolescents, Disease Transmission and Public Health Issues, Research Collaboration Networks, Political Networks and Interlocking Directorates networks. Dr Wang is currently working at the Centre for Transformative Innovation (CTI), Swinburne University of Technology, focusing on the development of a new statistical framework for the co-evolution of network structure and nodal attributes, and the application of such methods.



Justus Uitermark //

University of Amsterdam

Justus Uitermark is Professor of Urban Geography at the University of Amsterdam. Uitermark uses relational and geographic approaches to understand social change. He studies how processes like gentrification, segregation, and contention play out at the intersection of urban and online spaces, using Amsterdam as his main case study. Some of his work focuses on Instagram, asking how the platform shapes subjectivities, groups, and environments. A related line of work revolves around the epistemology and methodology of digital and computational research, arguing for situated and contextualized analysis. Uitermark further studies rapid urbanization and collective organization, focusing on Accra and Istanbul. In these different research agendas, a recurrent question is how power relations are consolidated or challenged.

Some recent key publications include [Longing for Wikitopia](#), [Reassembling the city through Instagram](#), [Cities and Social Movements](#), [Geographical Network Analysis](#), and [For a Heterodox Computational Social Science](#). More publications and information can be found at www.justusuitermark.nl.

02 //

PROGRAMME

CONFERENCE SCHEDULE

22 June

UTC+2

10:00–12:30	Workshops
12:30–13:15	Lunch break
13:15–15:45	Workshops
15:45–16:00	Break
16:00–17:00	Conference opening. Keynote talk
17:00–17:15	Break
17:15–19:45	Parallel sessions

23 June

UTC+2

13:15–15:45	Parallel sessions
15:45–16:00	Break
16:00–17:00	Keynote talk
17:00–17:15	Break
17:15–19:45	Parallel sessions
19:45–20:00	Break
20:00–21:00	Keynote talk

24 June

UTC+2

10:00–12:30	Parallel sessions
12:30–13:15	Lunch break
13:15–15:45	Parallel sessions
15:45–16:00	Break
16:00–17:00	Keynote talk
17:00–17:15	Break
17:15–19:45	Parallel sessions

DETAILED PROGRAMME

WEDNESDAY, JUNE 22

10:00 UTC+2	PARALLEL WORKSHOPS		
	Mixed Methods Research into Social Networks <i>Teacher: Betina Hollstein</i>	Multilevel ERGM Analysis with MPNet <i>Teacher: Peng Wang</i>	Network Visualization Tools <i>Teacher: Camille Roth</i>
	Network Dependencies in Social Space, Geographical Space, and Temporal Space <i>Teacher: Johan Koskinen</i>	Creating and Analysing Scientific Networks a Hands-on Activity Using Open-Access Citation-Metadata <i>Teacher: Bilal Hayat Butt</i>	
12:30	Lunch break		
13:15 UTC+2	PARALLEL WORKSHOPS (CONTINUED)		
15:45	Break		
16:00 UTC+2	Conference official opening. KEYNOTE TALK: Randall Collins		
17:00	Break		
17:15 UTC+2	PARALLEL SESSIONS		
	Semantic and Socio-Semantic Networks <ul style="list-style-type: none"> • <i>Margarita Zhdankina</i>: Comparative Analysis of Topics Covered by Fake and Reliable News in the Context of the COVID-19 Pandemic • <i>Denis Ananir</i>: Exploring Communities of Teacher Education Researchers • <i>Iina Hellster</i>: Social, Semantic and Socio-Semantic Networks: COVID-19 Pandemics in Scientific Publications 		
	Networks, Culture, Interaction <ul style="list-style-type: none"> • <i>Amanda Anderson</i>: Relational Coordination of a Cross-Sector Network Serving Medically Complex People Experiencing Homelessness: A Mixed Methods Pilot Study • <i>Dijana Mujkanović</i>: The Nature of Cross-Ethnic Relationships in Ethnically Polarized Settings: A Comparative Case Study of Bosnia and Herzegovina and Israel and the Occupied East Jerusalem • <i>Jan Fuhse</i>: Networks from Culture: Mechanisms of Tie-Formation Follow Institutionalized Rules in Social Fields • <i>Marina Biryukova</i>: Critical Reception of Museum Contemporary Art Projects in Online Networks 		

	<p>Qualitative Network Analysis</p> <ul style="list-style-type: none"> • <i>Francisca Ortiz</i>: Caring for Others: Theoretical/Methodological Approaches to Understand Care and Support Networks of Older People • <i>Daria Maltseva</i>: Network Analysis of Collaboration in Russian Sociological Community • <i>Aryuna Kim</i>: What Is Going On in the Field of Qualitative Social Network Analysis? • <i>Oleg Malafeyev</i>: The Allocation Problem of Distribution Centers in Network Nodes
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THURSDAY, JUNE 23

13:15 UTC+2	<p>PARALLEL SESSIONS</p>
	<p>Networked City: The Multiplicity of Urban Links and Nodes</p> <ul style="list-style-type: none"> • <i>Claire Buller</i>: Starting from the Street: Situating Urban Social Networks in Space-Time and Multi-Scalar Relations of Power • <i>Maria Podkorytova</i>: Interurban Network of Global Service Companies in Former USSR Region • <i>Yuri Bogomolov</i>: Scalable Spatio-Temporal Analytics Framework for Urban Networks • <i>Anastasiia Galaktionova</i>: Everyday Activity Networks Allocated through Public Participation GIS • <i>Aleksandra Nenko</i>: Spaces of Everyday Practices: A Tool to Define Real Structure of the City Based on User-Generated Online Data
	<p>Networks, Culture, Interaction</p> <ul style="list-style-type: none"> • <i>Olaf Rank</i>: Antecedents of Advice Ties for Knowledge Exploration and Exploitation • <i>Elena Elts</i>: Museums, Commemorative Practices and Networking • <i>Justus Uitermark and John D. Boy</i>: How Instagram Reshapes Urban Subcultures
	<p>Social Media Networks</p> <ul style="list-style-type: none"> • <i>Anna Smoliarova</i>: A Global Alternative Public on Instagram: An SNA-Based Case Study of the COVID-19 Coverage in Spring of 2020 • <i>Daniil Volkovsky</i>: Many Faces of Incivility: The Political (Non-)Dialogue in Networked Discussions on Polarizing Issues in Russian Social Media • <i>Alexandra Voronina</i>: Forming Virtual Identity (Based on Instagram Social Network) • <i>Nikita Sinitsyn</i>: "Vkontakte" Social Network Behavior Patterns: Case Study of Central-Chernozem Economic Region • <i>Svetlana Bodrunova</i>: Cumulative Distrust in the Telegram Anti-Vaxxer Communities
15:45	Break
16:00 UTC+2	KEYNOTE TALK: Betina Hollstein
17:00	Break

17:15 UTC+2	PARALLEL SESSIONS
	<p>Semantic and Socio-Semantic Networks</p> <ul style="list-style-type: none"> • <i>Camille Roth</i>: Resilience of Socio-Semantic Bubbles • <i>Galina Gradoselskaya</i>: Mapping Russian Scientists in the Humanities: From Theory, through Changing Practices to Changing Social Institutions • <i>George Regkoukos</i>: Ladies and Dzentel'Meny: A Socio-Semantic Analysis of English Loan Words in Russian Memoirs (1881–1914)
	<p>Qualitative Network Analysis</p> <ul style="list-style-type: none"> • <i>Puthan Purayil Mufsin</i>: Strength of Strong Ties: Wasta, Job Search and Mobility among the Mappilas of Southern India • <i>Sergei Karakozov and Smotryaeva Ksenia</i>: Neural Network Approach to Social System Analysis • <i>Dmitry Kirpishchikov</i>: The Connectedness of Directors in Russian Public Companies with Banks: Is This Helping to Accumulate Financial Resources? • <i>Aleksandra Shuvalova</i>: Formal and Informal Communication in an Organization in the Context of Digitalization
	<p>Social Media Networks</p> <ul style="list-style-type: none"> • <i>Kamilla Nigmatullina</i>: Discourse of Complaining in Social Networks in Russia: Smoothing Out Emotions or Solving Problems? • <i>Kerstin Pezoldt, Tatiana Lukicheva and Olesya Veredyuk</i>: Virtual Market as Networking Space: Conceptualizing Phenomenon with Digital Labour Platform Case • <i>Daniela Linkevicius de Andrade</i>: "Please, Use Your Best Judgment": Authority vs Moderation in the Creation of Knowledge on History Subreddits • <i>Darja Judina</i>: Assessing Electoral Potential by Interest Groups in Social Media in the Context of Russian Political System • <i>Olga Ignatjeva</i>: Network Analysis of Z Gen Political Participation in Youth Parliament
19:45	Break
20:00 UTC+2	KEYNOTE TALK: Daniel A. McFarland

FRIDAY, JUNE 24

10:00 UTC+2	PARALLEL SESSIONS
	<p>Statistical Network Modelling</p> <ul style="list-style-type: none"> • <i>Artem Maltsev</i>: Multilateral Security Cooperation beyond the Cold War: Temporal Modeling of International Military Deployments Networks • <i>Natalia Ryabchenko and Olga Malysheva</i>: Stochastic Diffusion Processes in Agenda-Setting: Interrelation between Official and Public Discourse • <i>German Chernykh</i>: On the Dynamics of an Artificial Neural Network as an Image of Social Self-Organization

	<ul style="list-style-type: none"> • <i>Johan Koskinen</i>: Closure in Relations under Secrecy • <i>Nikita Basov and Peng Wang</i>: On the Origin of Cultures: An Integral Model of Small Group Culture Creation
	<p>Networks, Culture, Interaction</p> <ul style="list-style-type: none"> • <i>Daniel Mayerhoffer</i>: Social Consumption, Personal Perception • <i>Nina Shcherbak</i>: Theory of Sign and Network Concepts: Innovations in Contemporary Anglophone Literary Texts and New Music • <i>Sanja Sekelj</i>: Model for the Analysis and Interpretation of Cultural Dynamics of the Art Field Based on Art Criticism—A Case Study from Croatia
	<p>Social Media Networks</p> <ul style="list-style-type: none"> • <i>Ivan Blekanov</i>: Comparative Analysis of Social Media Platforms: Similarities and Discrepancies • <i>Kseniia Alikova</i>: Mapping Crypto: Analysis of Cryptocurrency Controversies Based on Latour’s Approach • <i>Maxim Kolomeets</i>: Experimental Evaluation: Can Humans Recognize Social Media Bots?
12:30	Lunch break
13:15 UTC+2	PARALLEL SESSIONS
	<p>Networks of International and Supranational Gamblers</p> <ul style="list-style-type: none"> • <i>Aleksandr Zabolotskiy</i>: Research on the Development of China’s Foreign Economic Relations with Asian and African Countries in the 2010s Based on Network Analysis • <i>Alexander Kuteynikov</i>: Financing of UN Bodies and Organizations: How It Is Presented in the Form of Graphs
	<p>Network Analysis of Political and Policy-Making Domains</p> <ul style="list-style-type: none"> • <i>Kirill Serebryakov and Gleb Lapshakov</i>: Political and Economic Influence Groups in the Modern PRC: Interest Lobbying Architecture and Features of Network Configuration • <i>Tatyana Ukhova, Timin Daniil, Popkov Daniel, Mylnikova Polina and Pustovalova Svetlana</i>: Environmental Protests in Shies • <i>Gregory Khvatsky</i>: Efficiency Research in Sociology and Social Sciences: A Bibliometric Analysis
	<p>Gender and Social Networks</p> <ul style="list-style-type: none"> • <i>Elisa Bellotti</i>: Gender and Social Network Analysis • <i>Jan Schulz</i>: Perception and Privilege • <i>Deniza Alieva</i>: Societal Pressure or Free Choice: What Matters for Gender Composition of Informal Networks in the Workplace?
15:45	Break
16:00 UTC+2	KEYNOTE TALK: Ulrik Brandes
17:00	Break
17:15 UTC+2	PARALLEL SESSIONS

Literary Networks of the Long 19th Century: Sustainability and Dynamics on the Micro and Macro Levels

- *Olga Kulishkina*: The Resort Network of Long 19th Century Europe and Its Literary Representations
- *Elizaveta Burmistrova-Jennert*: The English-German Aspect of Stefan George's Literary Network Connections
- *Larisa Poluboyarinova*: Ivan Turgenev's Austrian Networks
- *Anna Shikhova*: Goethe and Social Network Analysis: Bildungs Concept in English Formation Novel of 19th Century

Network Analysis of Political and Policy-Making Domains

- *Anna Sokol*: Discovering Methodological Approaches to the Measurement of Social Movements' Political Impact: Bibliometric Analysis
- *Ilya Savelyev and Dmitry Polikarpov*: Network Analysis of Interaction between St Petersburg Legislative Assembly Deputies
- *Kenneth Stiller*: Together or Going Alone? A Multi-Level Network Model of Plurilateral Trade Relations

Gender and Social Networks

- *Irina Antoshchuk*: Gendering Diaspora Knowledge Networks: Male Bonding and Female Exclusion
- *Daria Galina*: Neural Networks and Gender: Social Research
- *Sofia Dokuka*: Core Discussion Network Size Is Positively Related to Academic Performance for Women

03 // KEYNOTE TALKS

Creativity via Networks: Music Composers in Europe 1600 to 1930 //

Randall Collins, University of Pennsylvania

The Sociology of Philosophies (Collins 1998) found that creativity of philosophers world-wide is based on intergenerational networks of masters and pupils, plus horizontal networks of young compatriots ("Young Turks") launching their careers. My current project finds similar patterns for music composers in Europe from 1600 to 1930.

Famous composers cluster in personal networks both across generations and in contemporary alliances and rivalries. Shifts in organizational bases re-organize the networks and generate new styles: for philosophers, bases are the rise and fall of religions, schools and universities. For composers, new styles and niches arise when networks shift among church careers, aristocratic patrons vying for prestige, impresarios of commercial performances, and publishers for amateur musicians (expansion of the market for pianos in early 19th C). The rise of music academies propelled both "Romantic" and Modernist styles, in Germany, Russia, and France. Genealogies of instruments became a cyborg network of instrument makers and composers (as in the careers of Beethoven and Chopin). This resembles innovation in the natural sciences, as networks of laboratory equipment became cyborg genealogies (one research tool becoming modified or recombined with another), fostering the careers of humans who interpreted these machine-made "discoveries". Thus networks of composers include also their patrons, and associates in instrument and music businesses (Handel as impresario). New instruments produce new kinds of music (the importance of brass in Wagner). We can trace the rearrangement of musical elements in music scores (often copied by the younger generation from the older), allowing us to see the creative micro-process in inter-textual networks.

Personal Network Dynamics Across the Life Course: A Relationship-related Structural Approach //

Betina Hollstein, University of Bremen

Drawing on Georg Simmel's writings, I will present a structural concept of the effects and dynamics of social relationships and networks that explicitly accounts for opportunities and constraints resulting from the fact that relationships are fixed patterns of interaction that, once established, unfold a power of their own that cannot easily be influenced by the involved actors. This concept allows for the integration of assortative, proximity, and relational network mechanisms. It is argued that in order to fully capture the scope of this approach, one must go beyond Simmel's concept of "form" and refer to so-called "basic structural properties" of

social relationships (quantity, time, space, freedom of choice, knowledge about one another, similarity, and degree of institutionalization). These structural properties impact the functional capacity of relationships, as well as the dynamics of both relationships and networks, especially the ways in which relationships are formed, maintained or lost. Referring to different life course events and transitions from different phases of the life course, I discuss how this perspective can advance research into the dynamics of personal networks across the life course.

Does the Evolving Structure of Knowledge Resemble the Evolving Structure of Societies? //

Daniel A. McFarland, Stanford University

Philosophers and historians of science have long argued that the bodies of knowledge are reflected in the patterned interrelation of concepts and ideas within the field. Without ever fully demonstrating it, they argue that as fields evolve, their semantic carrying capacity expands and the holistic structure of ideational relations grows more ordered and complex. A similar account can be found for the evolution of complex social structures in societies as well. Do knowledge structures have parallel processes to social structures? To ascertain this, we examine ideas and their interrelation as represented in language via academic publications. We describe the changing form these populations of ideas take and identify ideational properties and interrelations that correspond with intellectual persistence and change. In particular, we focus on the language employed in published works of computational linguistics and attempt to characterize how the knowledge structure of the field evolved over a span of 40 years—from its nascent stages (in the 1980's) to the more recognizable paradigm of thought we see today (2020). We draw on expert knowledge, phrase extraction techniques, and social network statistical models to paint an empirical portrait of the internal structural process of knowledge change within computational linguistics. We find structural features that reflect prior philosophers and historians of science's accounts of the structure of scientific knowledge (e.g., hard core and protective belt; resistance; etc). We observe that ideas have life-cycles; that certain structural forms resist change (hierarchy and closure) while others facilitate it (competition); and that the structure of ideas grows increasingly differentiated over time—reflecting an increasingly paradigmatic and differentiated field of knowledge. Finally, we find computational linguistics transforms from a phenomena-based field to one with "churning methods" where new methods replace older ones to better solve core problems and tasks. All in all, our findings thus elucidate how knowledge structures evolve over time and draw attention to parallel processes that may be at play, processes similar to the ones observed in the evolution of complex social structures.

The Delaunay Dance: Spatio-temporal Networks and Formations in European Football //

Ulrik Brandes, ETH Zürich

There is an abundance of methods to characterize the structure of networks, although one might argue that the degree of their systematization still leaves much to be desired. For networks situated in time and space, the difficulties already start when distinguishing temporal, time-varying, evolving, or other networks that relate to time, and space then complicates things further.

I will use a recent approach to study formations in football (the European variety also known as association football, soccer, or simply the beautiful game) with dynamic proximity networks to highlight issues and approaches for spatio-temporal network analysis. The talk has several limitations. Football is the most popular sport globally, but I will focus on teams in Europe and mention other sports. Player and ball tracking produces millions of data points, but most networks will be small with no more than 11, 22, or 23 nodes. Concepts and method are front and center, but no spatio-temporal centrality index will be proposed.

04 // SESSIONS

Semantic and Socio-Semantic Networks

| PART 1 |

Chair: Iina Hellsten

Wednesday, June 22

17:15–19:45 UTC+2

Comparative Analysis of Topics Covered by Fake and Reliable News in the Context of the COVID-19 Pandemic

Margarita Zhdankina, HSE University

The COVID-19 pandemic has been an urgent topic of discussion in various media and social networks for a couple of years already. The lack of research and the rapid spread of the virus around the world only contribute to an increase in media interest in this topic, but these same reasons contribute to the emergence of many fake-news headlines.

The article presents a study of the media coverage of the COVID-19 pandemic in the framework of fake news and its comparison with real news. The concept of "fake news" does not have a single definition, but within the framework of this study, intentionally unreliable media reports, including propaganda, would be considered as such.

This study is based on agenda theory, according to which media coverage of a topic has an impact on public awareness of it. The concept of a network agenda-setting gives us an opportunity to treat news as a media-discussion in which news topics compete for audience attention.

With the help of network analysis, the connections between the words most intensively used in fake and real news headlines were identified. Based on a database consisting of 3119 news, an analysis of correlations between the most frequently mentioned words in the headlines was carried out, based on which networks were built to analyze the main topics of the COVID-19 news.

The main results were that fake news headlines have less thematic diversity compared to real ones and focus more on emotional presentation, while the real news has a focus on informative and versatile news with capturing more topics.

The study was conducted in an exploratory format and can be used as a basis for a deeper analysis of fake news related to the COVID-19 pandemic. One of the prospects for the development of research is the expansion of the database, including considering the type of news source, news coverage, etc. The research can also be developed using additional data analysis methods, such as sentimental analysis and ERGM models.

Exploring Communities of Teacher Education Researchers

Denis Ananin, Moscow City University

Based on initial findings of the bibliometric study I would like to present insights into the field of teacher education research. Originally, teacher education was considered a nation-based research area because of its specific focus on national issues and teaching subjects. The main interest is based on the research question of how teacher education scholars build their communities on a national level and internationally. Using the tool VOSviewer the globe perspective offers an overview of research capacity, research patterns, and the topical variety of the field. The research appears as an established research field with a sustainable research agenda. The study brings evidence that the representatives of globally visible teacher education research build stable research sub-communities within teaching subject areas. The international networks of teacher education researchers are embedded into historical and cultural conventions of countries' interactions.

The ongoing study focuses on more detailed networks and publishing strategies of teacher education researchers. After sharing the results of the working paper, I would offer discussion questions regarding the TER (teacher education research) contributors:

- homogeneity/ heterogeneity of TER communities on a national level
- institutionalization of TER communities
- interaction of topical networks of TERs.

Social, Semantic and Socio-Semantic Networks: COVID-19 Pandemics in Scientific Publications

Iina Hellsten, University of Amsterdam

The recent COVID-19 pandemics has increasingly called for academic collaborations between the medical and the social sciences, on one hand, and interdisciplinary approaches within the various branches of the social sciences. The pandemics has wide consequences for public health, that calls for collaborations between public administration, health communication and psychology, for example. In this paper, we analyze the interdisciplinary collaborations within the social sciences and the humanities in tackling the societal crisis as social, semantic and socio-semantic networks of scientific publications.

We map social and semantic networks of publications indexed in the Web-of-Science Social Sciences Citation Index (SSCI) and the Humanities index in the early phases of the pandemics, from 1 January to 31 December 2020. The data set consists of a total of 9,435 articles that were published in 2020. We apply the whole matrix approach (Hellsten & Leydesdorff, 2019), and in particular, the n-mode network approach for analysing social and semantic networks of academic publications (Hellsten, Leydesdorff & Opthof, 2020).

We show our results of the patterns of, and development of interdisciplinarity between the various sub-disciplines in the social sciences and the humanities in three dimensions: 1) social networks of authors' institutional affiliations; 2) semantic networks the title words of the publications, and socio-semantic networks of the Web-of-Science subject categories and the related institutes. The resulting 3-mode networks (institutes, title words, and combined Subject categories and institutes) show that the sub-field of public environmental-occupational-health leads the research in terms of numbers of publications, followed by the environmental sciences. Both occupational health and the environmental sciences are interdisciplinary with participation of social sciences and the humanities. As regards the institutional affiliations, the UK and the US universities lead the research into the pandemics, and its effects, in social sciences and the humanities. The resulting 3-mode networks show that the sub-fields organize the research into the social and psychological aspects of the pandemic.

Semantic and Socio-Semantic Networks

| PART 2 |

Chair: Iina Hellsten

Thursday, June 23

17:15–19:45 UTC+2

Resilience of Socio-Semantic Bubbles

Camille Roth, Centre Marc Bloch, Berlin

The polarization observed in digital spaces makes them a prototypical playground for the study of sets of actors cohesively connected to alters holding similar opinions. Such socio-semantic bubbles raise the issue of resilience at two levels, whereby macro-level resilience may conflict with meso-level resilience: put differently, the deliberative capacity of a social system may be disrupted by the stability of groups whose members hardly encounter diverging narratives, are susceptible to “groupthink” or vulnerable to so-called “fake news”. This talk reviews our current knowledge on the empirical socio-semantic cohesiveness of bubbles and on the normative models explaining their plausible emergence. It also aims at challenging the common correspondence between low-level homophily and high-level fragmentation, that neither holds nor suffices to explain the wide spectrum of socio-semantic configurations observed across a myriad of online systems.

Mapping Russian Scientists in the Humanities: From Theory, through Changing Practices to Changing Social Institutions

Galina Gradoselskaya, Russian Presidential Academy of National Economy and Public Administration (RANEPA)

Mapping the young Russian scientists in the humanities, we combined theoretical and applied approaches. Firstly, we relied on sociological theory—an activist paradigm (P. Bourdieu, A. Giddens, P. Sztompka, etc.), which considers the mechanisms of global social change through changes in the practices of individual actors. Secondly, based on our previous research, young scientists-humanities are the main intermediaries, spreading their priorities to other active groups: youth, socially and politically. By changing the practices from groups of scientists-humanities, it is possible to change practices of a wide range of recipient groups. Over time, it is possible to obtain changes in some social institutions.

We carried out a detailed mapping of groups of Russian scientists-humanities in the social network Vkontakte. We used our method of grain clustering. As a result of the

clustering, were obtained 1,500 groups of scientists-humanities and 13,000 related groups, characterizing their preferences in literature, hobbies, and lifestyle.

Extension of the context was received through references in the publications over the past 2 years an additional 19,000 connected groups. To understand the dominant philosophical, social, economic and political ideas, 84,000 files of references were obtained.

In addition, texts of publications in groups over the past 2 years were analyzed. They contained 23,000 words (tokens), which interpretative by meaningfully. So, we obtained the lists of scientists and public figures authoritative among the young Russian intelligentsia.

Based on the results of the study, conclusions were drawn about the dominant practices, theories, ideas and their distribution in scientists and related social groups. It also became possible to understand about social institutions undergoing changes and their mechanisms.

Ladies and Dzentel'Meny: A Socio-Semantic Analysis of English Loan Words in Russian Memoirs (1881-1914)

George Regkoukos, University of Oxford

This paper investigates the synchronicity of linguistic and social change through socio-semantic analysis. I focus on English loan words in Russian using a corpus of 150 manuscripts (memoirs of Russian nobility) that includes imported words (e.g. dzentel'man), domesticated terms (e.g. parlament-skii), and derivatives of non-Russian etyma (modern-izatsiia). These features are contextualised intratextually (using topic and subject-matter associations) and extratextually (using correlations with the author's position in the social network). The process entails several steps: collocations and the strength of associations are measured using SketchEngine; discourse and frame analysis is facilitated by NVivo; and Gephi is used to perform statistical calculations on the linguistic network (where nodes are English loan words). This combination of methods allows a robust analytical model for interrogating the socio-cultural context of lexical change in Late Imperial Russia.

The resulting 'linguandscape' (Appadurai 1996) demonstrates the importance of transcultural flows in Europe. In my summary of findings, I posit that Anglo-Russian linguistic 'thickenings' were a salient feature of Russian intellectual life in the late nineteenth century. British influence engendered linguistic and cultural change and radically altered the network dynamics of Russian social elites. The nobility's language became bowdlerised, their narratives emphasising Victorian morality and values. Poignantly, Russian noblewomen became more restricted in their expressions and function(s) within the elite network, emulating their English counterparts. In this sense, the transcultural role of languages shows new histories and new modes of representation in Russia.

Networks, Culture, Interaction

| PART 1 |

Chair: Jan Fuhse

Wednesday, June 22

17:15–19:45 UTC+2

Relational Coordination of a Cross-sector Network Serving Medically Complex People Experiencing Homelessness: A Mixed Methods Pilot Study

Amanda Anderson, State University of New York at Buffalo

Ensuring safe & efficient care to medically complex people experiencing homelessness (MC-PEH), is challenging. After hospitalization, MC-PEH often require complicated care spanning many sectors (health, social, legal, housing, etc.).

The integration to sustain cross-sector care transitions for MC-PEH in the immediate post-hospitalization period are poorly supported, or do not formally exist. Barriers include variance in provider organizational culture, roles, service duplication, & lack of collective structure. As such, MC-PEH suffer from siloed transitional care, incurring the greatest risk and cost.

Social network analysis (SNA) shows relationships between sectors, and impacts implementation of evidence-based care modalities. Building on SNA, the validated Relational Coordination (RC) survey analyzes team communication & relationship characteristics.

The study will analyze network relational patterns (coordination; integration) and the impact of member attributes (sector, organization type, role hierarchy, licensure) on Relational Coordination characteristics in an established cross-sector network providing collaborative care to MC-PEH.

Providers in an existing cross-sector care network will be surveyed with the RC tool. Integration will be analyzed through network metrics (centrality, density, etc.). Coordination will be representative of RC construct. Post-survey interviews will ascertain qualitative response to cross-sector care.

Expected network metrics include concentrated integration in certain sectors, & barriers in others. Relational Coordination findings may suggest impact of role attributes, with focus on culture & organizational variance. Qualitative results may expand on cross-sector barriers.

This study will show attributional impact on MC-PEH transitional care. With this baseline, we will establish a framework to further explore attributional impact on the patient outcomes of re-hospitalizations, patient experience, & provider valuation of care.

The Nature of Cross-Ethnic Relationships in Ethnically Polarized Settings: A Comparative Case Study of Bosnia and Herzegovina and Israel and the Occupied East Jerusalem

Dijana Mujkanović, Graduate School of Public and International Affairs, University of Pittsburgh

Ethnic segregation is characteristic of many ethnically polarized settings and commonly exhibited through, and reinforced and legitimized by, public and private institutions. While ethnic segregation does not limit all forms of interactions, it renders most intergroup contact superficial and transient. Yet, the Contact Hypothesis suggests that prejudice, which exacerbates intergroup conflict, is minimized through greater contact. In fact, in their meta-analysis of more than 500 studies, Pettigrew and Tropp (2006) found 'friendship potential' to be the most important mediating factor that allows intergroup contact to achieve its desired positive effect on intergroup relations. In other words, their findings suggest that it is not mere contact that minimizes prejudice and leads to better intergroup relationships, rather it is the ability to form meaningful cross-group relationships. This paper examines the nature of cross-ethnic relationships in two ethnically polarized settings with a history of recurrent ethnic conflict and violence. It explores how such relationships are inhibited by structural limitations of institutionalized segregation, as well as how those limitations are navigated by ordinary people to form and maintain those relationships. My preliminary findings show that meaningful cross-ethnic relationships increase understanding for the experience of the ethnic Other, whereas superficial interactions can increase the salience of existing stereotypes. Moreover, structural ethnic segregation that inhibits meaningful interaction in individuals' formative years serves as a significant impediment to cross-ethnic relationships throughout life. Lastly, language can serve as an important lubricant for creating a sense of shared culture and equality that allows such relationships to deepen. This qualitative personal network analysis is based on original data derived from 100 in-depth individual interviews conducted in 2021–2022.

Networks from Culture: Mechanisms of Tie-Formation Follow Institutionalized Rules in Social Fields

Jan Fuhse, Humboldt University of Berlin

Tie-formation mechanisms like homophily, reciprocity, transitivity, and preferential attachment operate to varying degrees across contexts. Romantic ties tend to be homophilous by age, education, and ethnicity, and to remain dyadic. Scientific citations, in contrast, fall into highly unequal preferential attachment patterns. Triangulation is nearly absent in advice and patronage networks but features prominently in friendship ties. Building on relational sociology and field theory, we argue that such variation in patterns of connectivity derives from the meaning attached to relationships, which varies by context. Tie-formation logics are

institutionalized rules-of-the-game and susceptible to change over time. Accordingly, the mechanisms of tie-formation behind empirical network patterns have to be connected to the cultural rules in particular fields.

Critical Reception of Museum Contemporary Art Projects in Online Networks

Marina Biryukova, St. Petersburg State University

The modern art museum is increasingly moving into the sphere of the Internet: these are virtual museums, the museum brand and content promotion on the web, virtual excursions, and online museum communities. Criticism of museum projects is also moving into the digital sphere. Social networks, blogs, forums are a platform for relatively free critical statements about museum curatorial projects. Some exhibitions of contemporary artists—Jan Fabre, Damien Hirst, Bill Viola at the largest museums in Europe become the target of a far from favorable reception in social networks, which was not initially provided for by the curators of the projects. The report examines criticism and interpretation of museum art projects on websites of museums, as well as on social networks, online forums and blogs, using the example of discussions of the last decade projects of Jan Fabre at the Hermitage and the Louvre, the Chapman brothers and Anthony Gormley at the Hermitage, Bill Viola at the Royal Academy in London and the Pushkin State Museum of Fine Arts in Moscow and others. The role of the amateur viewer-critic meets the tasks of art projects in the era of media and the free Internet. With the development of digital technologies, the right to publish critical judgments about art has ceased to be a privilege of professionals, and comments and subjective assessments of exhibitions often become an integral part of the context and history of curatorial projects. In recent years, the non-professional critic-visitor has become an active participant in the art media space—a blogger, reporter, photographer, commentator, storyteller. This process is relevant to the construction of a new media reality, which becomes no less real in the collective consciousness than actual events. The study of this phenomenon seems to be a promising topic for interdisciplinary research at the intersection of cultural theory, aesthetics, media theory and network analysis.

Networks, Culture, Interaction

| PART 2 |

Chair: Jan Fuhse

Thursday, June 23

13:15–15:45 UTC+2

Antecedents of Advice Ties for Knowledge Exploration and Exploitation

Olaf Rank, University of Freiburg

In this study, we test the relative importance of three kinds of antecedents to the intraorganizational advice seeking behavior of senior managers: (1) collective identity (to reference group) as a form of horizontal identification, (2) status as a form of vertical differentiation, as well as (3) norms and values. More specifically, we distinguish advice ties serving the exploration of knowledge and advice ties being applied for knowledge exploitation. For our empirical analysis, we use data that have been gathered on advice seeking relationships among 187 senior managers of a German multinational corporation in the high-tech sector. Applying a class of exponential random graph models (ERMGs), we find that advice seeking behavior for knowledge exploration versus exploitation seems to follow different considerations. Managers' efforts when exploiting intraorganizational knowledge are predominantly based on pragmatical concerns and issues of convenience, whereas advice seeking with respect to knowledge exploration is characterized by a nuanced set of antecedents comprising aspect of identity, status, as well as norms and values. Our findings suggest that it is not only important to distinguish between different types of relational ties. It is similarly critical to take into consideration the purpose for which relational ties are applied when analyzing collaborative networks.

Museums, Commemorative Practices and Networking

Elena Elts, St. Petersburg State University

The growing social role of the museum determines the development of its external network structure. D. Nye, characterizing network communications, noted their great potential in overcoming cultural differences, as well as the need to support the network.

The anniversaries of important historic events of the Second World War are marked by a broad range of commemorative practices across Russia and Europe in which the museums take an active part. Historical events and commemorative memory practices increasingly transcend national boundaries and contribute to expanding networks and relationships built by museums with local and foreign partners. The paper analyzes the experience of commemorative practices (memorial expositions, thematic exhibitions, museum and pedagogical classes, excursions, events), identifies their impact on museum networks, chains and branches, partnerships,

collaborations, community, an international network of relationships between the museum and the target audience. Particular interest is how museums are using social media platforms in exploiting its features and possibilities and are forming social networks. Using the case study method and comparative analysis the paper explores how during the practice of commemoration, a new perspective on historical facts and events is beginning to take hold.

How Instagram Reshapes Urban Subcultures

Justus Uitermark, University of Amsterdam and John D. Boy, Leiden University

Commentators and scholars view both social media and cities as sites of fragmentation. Since both urban dwellers and social media users tend to form assortative social ties, so the reasoning goes, identity-based divisions are fortified in digital and urban spaces. Drawing on a dataset of 34.4 million interactions among Amsterdam Instagram users, this presentation seeks to gauge the level of fragmentation that occurs at the interface of digital and urban spaces. We find some evidence for fragmentation: users form clusters based on shared tastes and leisure activities, and these clusters are embedded in distinct lifestyle zones at the interface of social media and the city. However, we also find connections that span divisions. Similarly, places that are tagged by Instagram users generally include a heterogeneity of clusters. While there is evidence that Instagram users sort into groups, there is no evidence that these groups are isolated from one another. Users coalesce into groups, so much is true, but the boundaries of such groups are fuzzy.

While these findings qualify fears that social media generate algorithmically fortified divisions, the social integration promoted through Instagram is not necessarily or unambiguously benign. Combining network analysis with interviews, we argue that the visibility promulgated through social media affects urban subcultures in different ways, but overall, pushes in the direction of conformity. This presentation helps us understand why—notwithstanding tidings of fragmentation—deviance and eccentricity have a hard time finding a place on Instagram and in the city. We illustrate this overall dynamic by studying how cultural institutions, nightclubs, cafés, bouldering gyms, and fitness clubs, among others, navigate Instagram's politics of visibility.

Networks, Culture, Interaction

| PART 3 |

Chair: Jan Fuhse

Friday, June 24

10:00–12:30 UTC+2

Social Consumption, Personal Perception

Daniel Mayerhoffer, University of Bamberg

In contemporary societies, people define their position and even partly even their identity material possession, especially in relation to others. Thus, consumption (i) is an important feature of one's identity formation and (ii) consumption is not purely idiosyncratic but also entails a status component (Warde 2015). Status consumption presents an explanation for the striking co-movement between economic inequality and private debt (van Treeck 2014). Hence, since Veblen (1899) consumption has been of interest for sociologists and economists alike.

To capture the idea of identity-formation through status consumption, we propose a parsimonious agent-based network model: While the idiosyncratic component is a fixed proportion of an agent's income, the status component depends on link-neighbours. We build on the Random Geometric Graph type of network to represent the empirically established fact that individuals' closest layer of interaction consists of others with a similar income. Agents observe the consumption of these close contacts and try to catch up with the highest consumption they observe. Individual perceptions thus neither base on inherent bias nor unobservables but merely on limited skewed information sets based on a homophilic network. The model is validated on empirically observed perceptions of both general inequality and gender or racial wage gaps as well as micro consumption behaviour.

Expectably, we find a decrease of individual average propensities to consume monotonically in income. Aggregate consumption unanimously increases in inequality. However, this effect is mitigated by endogenously evolving perception networks featuring homophily, where increasing inequality also increases segregation within the network. This implies a trade-off between social integration and environmental sustainability of consumption. Furthermore, not only the actual income distribution but also local knowledge and perception matter for individual and aggregate consumption.

Theory of Sign and Network Concepts: Innovations in Contemporary Anglophone Literary Texts and New Music

Nina Shcherbak, St.Petersburg State University

This research aims of this study is to compare the language of music and literary language (poetry and prose) with network concepts, describing the philosophy and strategies that underlie them. Post-modern concept of a rhizome and network concepts have direct application to the contemporary view of the state-of the art paradigm of cultural and social development, often viewed as applicable to the study of literary and musical texts. The chosen methodology includes the analysis of post-structuralist philosophy which is directly applicable to the study of modernist as well as post-modernist poetry and prose. Another important area is the relation of literary texts to the language of music. Language of music is very abstract. The meaning could be understood through the study of entire compositions. Literary texts are far less abstract, yet its form and the narrative itself could be studied as related to the process of cognition. Internal speech is what unites language of music and literary texts. Their relation to network concepts could be seen through non-conventional hermeneutics and the study of contemporary texts and New Music. Another area that is touched upon in this research is a contemporary version of the theory of sign that explains how meaning is attached to the word form. Contemporary texts rely more on the iconic properties of words. New Music tends to be more iconic as well. Contemporary meta-modernist paradigm allows us to explore “basic sounds of the world” and study the language of music and literary language as having common grounds. In this respect their relation to network concepts is seen on the level of text and music interpretation. The social role of language is related to its cognitive function. The results of this research allow us to see links between language, music and social practices, address the issue of nature versus nurture, that is what properties are inborn and which once are acquired.

Model for the Analysis and Interpretation of Cultural Dynamics of the Art Field Based on Art Criticism—A Case Study from Croatia

Sanja Sekelj, Institute of Art History

The problem of missing data or the bias present in research that is based on the use of already structured data sources is one of the issues always highlighted when one delves into historical network research in general, and the analysis of the dynamics of the art field in particular. These biases are not only present when one considers the relationship between different geographical art “centers” and “peripheries,” but also when one focuses on the development of the art field in a narrower local or regional context. This contribution proposes a model for the analysis and interpretation of dynamics of the art field that is based on art criticism: by using art magazines of different esthetic and ideological profiles as data sources, network analysis of art criticism is used to identify central actors and changing trends of a

specific art scene, as well as different and sometimes competing social circles, the simultaneous presence of which gives a more nuanced understanding of the complexities of the art field, and of the relations between the artistic and socio-political paradigm. The basic hypothesis of this research is that the visual arts scene develops in interaction of different types of individual and collective actors, which forms the dynamic network structure of the art field. Actors enter into existing network and cultural structures, which function according to already established "conventions," which they can choose to follow or thoroughly change with the help of resources and "cultural idioms" at their disposal in a particular time and place. Initially developed on the case study of the art field in Croatia during the nineties and the early aughts, a wider application of the model would serve its further development, while it would simultaneously allow for more structured research of connections and collaborations of different national art scenes in a globalized art world.

Qualitative Network Analysis

| PART 1 |

Chair: Elisa Bellotti

Wednesday, June 22

17:15–19:45 UTC+2

Caring for Others: Theoretical/Methodological Approaches to Understand Care and Support Networks of Older People

Francisca Ortiz, Millennium Institute for Caregiving Research (MICARE)

This research seeks to understand care and support networks of older people in Santiago de Chile. More specifically, this study will focus on identifying and describing those with an emphasis on gender and age inequalities. Accordingly, it will be measured the nature of those relationships (kinship, acquaintances, friends, among others categories), to evaluate how the circulation of care through them, and how relevant they are.

It is planned to do fieldwork in Santiago of Chile, collecting a diversity of data as documents, surveys, interviews, and a name generator of the care and support networks. In this presentation I will be sharing about two main aspects of the research: first, the theoretical approach and the difference between the concepts of care and social support form a networks perspective. Secondly, it will show the methodological approach, with collection and analysis strategies. Finally, it will be shown a first look at the data collected from fieldwork.

Network Analysis of Collaboration in Russian Sociological Community

Daria Maltseva, HSE University

The process of sociology development as the scientific discipline and the formation of a professional community of sociologists in the Soviet era are characterized as nonlinear and dramatic. Two unrelated periods can be distinguished—sociology developed in the context of ideas of foreign social researchers in the pre-revolutionary period, and sociology of factory research in the 1960–70s, characterized by the absence of links with "bourgeois science". The latter was characterized by the weak integration with foreign sociological science and the insignificant representation of Russian sociologists in the world scientific discourse.

High level of centralization in modern Russia, inequality between capitals and regions contributed to strengthening communities in Moscow and St. Petersburg but questioned the existence of the regional scientific schools developed in the

Soviet Union, making it possible to characterize the relationship between the center and regions in terms of metropolitan and provincial sciences.

We study the structure and patterns of collaboration in the scientific community of Russian sociologists. Based on the publications of Russian sociologists in the eLibrary database, we use SNA for building collaboration networks, understanding collaboration by co-authorship of a scientific article. Since the methodology for analyzing bibliographic sources is well developed for analyzing works in English, this project contributes to the development of a methodology for analyzing bibliographic networks of Russian-speaking authors.

Usage of the network analysis will allow us to determine the structure of the sociological community, identify different groups of sociologists and determine their orientation to local and foreign scientific communities. The study of the interactions of scientists at the local level can show their (in)efficiency and form ideas of the structural changes necessary to increase their competitiveness in the international arena.

What Is Going On in the Field of Qualitative Social Network Analysis?

Aryuna Kim, HSE University

The field of QSNA is a rapidly developing scientific field that has appeared and grown significantly over the past 20 years. According to the search for works with qualitative approach in network study the first article was published in 1997 (Kim, 2021). Now network conferences such as Sunbelt, NetGlow started to organize sections with qualitative social network studies and mixed method network studies. This study is devoted to the development of the field of qualitative social network analysis through the focus of bibliometric analysis of publications and journals involved in the field.

The aim of our study is to implement a comprehensive approach for the identification of the main trends of the QSNA field development, with a representation of various disciplinary areas, groups of scientists, and thematic agenda in the field. The applied bibliometric analysis allows analyzing networks of co-authorship, co-occurrence, citation and co-citation between different bibliographic entities, and identifying key publications and actors (authors, research groups, institutions, journals) in the field of QSNA, main topics and scientific ideas, connections between them and their evolution in time. The study is based on the analysis of networks of articles from the Web of Science database.

A bibliometric network analysis can show the development path of the field of qualitative network approach. Since the purpose of this study is devoted to describing the evolution over time of the field of qualitative network analysis, to find the main researchers, papers and journals of this field. After considering different combinations of keywords for searching for sources, we stopped at the keywords "Social network* + (Qualitative OR Mixed method*)" and those published in the main journals in the field (in total 21,829 publications). The choice was made in favor of the Web of Science database, since this database is characterized by a more traditional and narrow set of scientific papers.

The Allocation Problem of Distribution Centers in Network Nodes

Oleg Malafeyev, St. Petersburg State University

The network with a finite set of nodes is considered in this paper. The manufacturers of the same type of products and retail outlets are located in this network. The manufacturer produces the one-type product and sends finished products to distribution centers (warehouses). From distribution centers, the product arrives at retail points of sale. For each manufacturer are given the costs of transporting products from the point of production to the distribution center. In some sections of the network, transport costs depend on the amount of products transported along the selected edge of the network. In this case, the quantity of the products transported along this edge is given. In such sections the producers minimize their costs and choose a route according to the given principle of optimality—the Cournot-Nash equilibrium.

After choosing the optimal route on the section of the network the manufactures choose the distribution center. Manufacturers moving from the point of production to the possible location of the distribution center, choose the distribution center, during the transportation of products to which the costs are minimal. The owners of sale retail points also minimize transportation costs when transporting finished products from the distribution center (warehouse) to the retail point of sale. The problem of placing distribution centers in the network in accordance with the specified optimality principle—a compromise solution, is solved in this paper. The numerical example is calculated.

Qualitative Network Analysis

| PART 2 |

Chair: Elisa Bellotti

Thursday, June 23

17:15–19:45 UTC+2

Strength of Strong Ties: Wasta, Job Search and Mobility among the Mappilas of Southern India

Mufsin Puthan Purayil, Indian Institute of Management Calcutta

This study seeks to explore the job search strategies of emigrants and, in the process, understand how network resources are evoked in search of labour market information and what are its possible implications on job seekers' social location and identity. The study intends to do this by looking at the job search experiences of a leading migrant community in southern India—the Mappilas of Malabar. Mappilas have been migrating to the Persian Gulf (to the Petro-monarchies of Saudi Arabia, UAE, Qatar, Oman, Bahrain, and Kuwait) since the 1950s and more actively since the 1970s. Over the years, Mappilas became one of the largest migrant groups in India. Although there is a thriving migration brokerage industry in India, our findings suggest that Mappilas secure the crucial labour market information, facilitate their cross-border movement, and obtain the much-coveted Gulf job using social networks. With their familiarity and first-hand knowledge of the market practices of the Gulf, the Mappila migrants have internalised and strategically invested in the Arab cultural practice of wasta (securing favours via social connections). We argue that the Mappilas' ability to strategically use their strong interpersonal networks—animated by the Arab social practice of wasta—opens up a new vantage point to understand the role of social networks in the migration labour market. The study is based on fourteen-month ethnographic fieldwork conducted in Southern India among the Mappila community in 2019–2020.

Neural Network Approach to Social System Analysis

Sergei Karakozov and Smotryaeva Ksenia, Moscow Pedagogical State University

The report describes how social systems may be analyzed through neural network approach where a neural network refers to an information self-learning system that changes its pattern of behavior under the influence of information. It further considers self-generation and destruction networks (SR-networks) where information is acquired with the help of the relations between elements being changed and elements being self-generated or destroyed. SR-networks theory tries to answer whether it is possible to design a learning strategy capable of 1) transforming an invisible fact into an obvious fact and vice versa as well as 2) allowing every new input to destroy the previous facts and/or rules.

A social system is an integral unity where people, their interactions, relationships, and connections are considered to be the main element. To design social processes, SR-networks paradigm may be applied, since people are born (self-generation network) and then die (destruction network). Thus, SR-networks may describe strategies for managing your society (civilizational development, social advertising) and the competing society (information war, marketing advertising).

The theorem on the capabilities of SR-networks (M. Dekhtyar, A. Dikovskiy, S. Rastorguyev) may be interpreted in a way that it is impossible to design one universal criteria to choose the best way to develop a social system, since it is necessary to consider the external environment and trends in the development of a society, the psychophysiological characteristics of its national group, and its history and traditions. Therefore, complex SR-networks management is a compromise between science and art.

The Connectedness of Directors in Russian Public Companies with Banks: Is This Helping to Accumulate Financial Resources?

Dmitry Kirpishchikov, HSE University

According to the resource dependency theory (Pfeffer & Salancik, 1978) Board of directors can be viewed as a source of valuable resources. In this paper, we want to assess the ability of public companies to attract long-term financial resources using the connectedness of the Board and Social Network Analysis. We focus on the Board of directors in large Russian public companies and determine their professional connections with Boards in Russian banks.

To find the effect, first, we need to construct a graph that contains information about interlocks between directors in companies and banks. In practice, we deal with two separate graphs and establish the ties between them, finding a sort of "bridges". Second, we want to focus on these "bridges" and calculate the centrality metrics for each director. We calculate degree centrality, betweenness centrality, closeness centrality, and eigenvector centrality. Then we aggregate these metrics on the company level, obtaining average values in each Board. Therefore, we can find companies with broader access to resources in terms of their connectedness.

Therefore, we obtain variables that describe companies' ability to attract financial resources through their Boards. Further, we will use these variables in the regression models.

Formal and Informal Communication in an Organization in the Context of Digitalization

Aleksandra Shuvalova, St. Petersburg State University/Bielefeld University

This research considers digitalization as a part of a broader transformation of communication. More specifically, the aim of this study was to determine the role of digitalization in changing formal and informal communications in an IT company engaged in information technology and programming.

In this work the case study method was used, a small IT firm (25 employees) was investigated. A non-participant observation and fourteen interviews with employees of the IT company were carried out. The network analysis begins with an attempt to identify how communication in this organization is arranged in the present and continues with analysis of how it used to be before, how it has changed. The research revealed that the employees due to the automation of the general billing system, began to communicate less on routine issues, formal communication transferred to online communication or was replaced by automatic reports. Personal informal verbal communications did not change drastically, but online communications increased significantly due to the introduction of a messenger into the workflow, where work and non-work group chats began to be created. We talked about latent processes, hidden mechanisms of social relations and qualitative research methods that allowed us to reconstruct the scope of informal relationships that exist between people and find out whether it is being affected by digitalization.

This paper is divided into four sections. The first section gives a brief overview of already existing research regarding this topic. The second section examines the system of communications in the firm in the present time mainly based on observation. In the third section the comparison of certain communications in the past and present are presented as well as the changes that the organization has experienced that might have led to a series of changes in communication. The conclusions are drawn in the final section.

Social Media Networks

| PART 1 |

Chair: Svetlana Bodrunova

Thursday, June 23

13:15–15:45 UTC+2

A Global Alternative Public on Instagram: An SNA-Based Case Study of the COVID-19 Coverage in Spring of 2020

Anna Smoliarova, St. Petersburg State University

The study examines the foreign Russian-language blogosphere on Instagram through the lens of the public sphere theory, in particular the networked publics theory. More than 4,000 Russian-speaking Instagram users commenting on posts became members of the networked publics that coalesced through an active cooperation of bloggers living in different countries. They all contributed to the coverage of the coronavirus pandemic in March-April 2020. The bloggers who initiated contributory publications on the situation with COVID-19 in their countries have gradually become points of crystallization of public discussions for people with migration experience, who are often excluded from the national public spheres of both their home countries and countries of residence. In the arena constituted by these bloggers as by a type of ad hoc media, Russian-speaking migrants living in different countries could discuss the measures that states were taking to defeat the pandemic.

Our dataset includes 120 posts with 12,000+ comments organized around 8 hashtags published in March to April 2020. We have explored the temporal development of the global alternative public with the help of social network analysis reconstructing the structure of the hashtag-oriented networked public. The findings suggest that collaboration of bloggers leads to the emergence of online ad hoc, or situational, global media in the Russian language. We also show how exactly the affordances of Instagram foster creation of ad hoc media-like discussion milieus.

Many Faces of Incivility: The Political (Non-)Dialogue in Networked Discussions on Polarizing Issues in Russian Social Media

Daniil Volkovsky, St. Petersburg State University

The paper investigates the communicative culture of Russian online deliberation. The recent research on dissonant publics (Pfetsch, 2018) and cumulative deliberation (Bodrunova, 2021) allows for interpreting communication on online forums and social networks as a form of online deliberation dependent on features of networked discussion structure, cultural factors, and user traits and intentions. In Russia, mass-scale political discussions demonstrate strong opinion polarization

(Bodrunova et al., 2020) which fuels political hostility; at the same time, political hate speech may perform constructive functions within a heated political discussion (Bodrunova et al., 2021). We explore the deliberative nature of two polarizing discussions of 2020–2021, namely the pensions reform and the court sentence to the politician Alexei Navalny, in terms of civility of public dialogue. For this, we employ the discourse analysis of the online 'deliberative standard', as developed by Misnikov (2011) based on the works on deliberative democracy by Juergen Habermas. In particular, we focus on civility as the discourse parameter that has been recently contested for its role in online deliberation. Our results demonstrate that civility in the Russian-language online discussions is extremely low; in line with the previous studies of political online discussions in Russia but partly dissimilar to its Western analogs, uncivil expressions form the very fabric of discussions in both social networks and online commenter forums. We show how intolerance to political opponents is structured on the various platforms and how they relate to the network features of the discussions, and provide evidence of the cumulative character of incivility. The discussions appear as having no consensual purpose. In addition, their participants even frequently distract from the main topic and tend to discuss interpersonal themes rather than the issues established at the start of a networked discussion.

Forming Virtual Identity (Based on Instagram Social Network)

Aleksandra Voronina, Admiral Makarov State University of Maritime and Inland Shipping

The process of forming a virtual identity has a number of features that distinguish it from the corresponding process in real life.

In order to identify and more thoroughly study the peculiarities of the formation of virtual identity the study of the social network Instagram has been conducted since 2016. The main research method is participant observation. We created and developed an expert blog on the Instagram social network. At the moment, the blog has more than 25 thousand followers. The method of in-depth semi-structured interviews with bloggers and ordinary Instagram users is also used in the research.

To date, 50 interviews have been taken. The method of polling blog's audience is used periodically in posts. In addition, there is an entrance to bloggers' chat, where discussions on both technical aspects of blogging (that is, the chat serves as a mutual help), and ordinary communication on various topics are held.

Some of the conclusions are the following:

- The virtual space gives the individual ample opportunities for self-expression, and the virtual identity allows him to maximize his potential. For example, an individual has dreamed of becoming a writer or photographer all his life, social networks allow him to realize his potential as an enjoyable hobby. Positive feedback from other users will only reinforce continued disclosure of his potential, which may lead to the interest of professional communities to his

blog that are currently also present on social networks. And he will be able to be an influencer.

- The larger the blogger, the higher the likelihood that facts from his real life will seep into the virtual environment, which he hid about himself, building his virtual identity. In this case, there is a transformation of his virtual identity and its greater merging with the real identity.
- Virtual identity is positioned as socially approved when there is a response from other users in the form of "likes", "comments", "reposts".

“VKontakte” Social Network Behavior Patterns: Case Study of Central-Chernozem Economic Region

Nikita Sinitsyn, Moscow State University

“VKontakte” open data was used in this study. The information about users was collected via “VKontakte” API. Users, whose age is between 15 and 70 years old and who live in the cities of Central-Chernozem economic region of Russia were included in the sample. Three filters were used to omit fake users. Filter of 2 weeks exclude inactive users by the time of the last visit. Usually fakes are created for each project and they «fall asleep» at the end. Filter by the amount of subscribers is rather useful, because fakes often have a huge number of subscribers. Filter by the context of status helps to exclude users with advertising in it. Then all subscriptions of non-fake users with open pages were collected.

The key issue of the study was to create complex users’ characteristics, which can show its tastes and interests according to his or her subscribes for social network communities (publics). A group of users, which tends to subscribe to a certain set of communities is called a pattern of social network behavior. They were defined using a developed method of graph clustering, based on the OpenOrd layout algorithm.

Eleven patterns of social network behavior were obtained. They can be divided into 2 groups. Publics of age-sex patterns have no common subject, they have large number of users. Humor is the most popular topic among the public in such patterns. Publics of thematic patterns certainly have one or two common subjects. These patterns have little number of humorous publics. The population of thematic patterns is much less, than population of age-sex patterns.

To a first approximation, these 2 groups of social network behavior patterns can be described in terms of mass and elite. Group of age-sex patterns is mass because its users are usually interested in popular culture. Thematic patterns sometimes look like little groups of professionals or subcultures.

Cumulative Distrust in the Telegram Anti-Vaxxer Communities

Svetlana Bodrunova, St. Petersburg State University

The COVID-19 pandemic has brought along an unprecedented amount of social fear and uncertainty. Among other social effects, it has spurred distrust to rational anti-COVID measures and outbursts of conspiracy theories. Within the infodemic in countries like Russia which demonstrate a 'triangle of distrust' between politicians/institutions, media, and audiences, this has combined with the large-scale pre-existing vaccine hesitancy and resulted in the appearance of widespread resistance to vaccination. It has also spurred formation of closed-up communicative milieus of the anti-vaxxer discourse, the largest of them, anti_covid21, found today on Telegram, created by COVID-denialists, and flourishing from day to day.

In our research, we show how the platform affordances of Telegram communities (with the commenting feature enabled) create a 'spiral of reinforcement' for distrust and conspiracy thinking. We collect all the posts and comments available in the anti_covid21 community by September 2021, which makes 282,000+ comments, and employ dictionary-based filtration, manual coding, time-series analysis, and interpretive reading to evaluate cumulation of negativism. By assessing the dynamics of distrust towards various actors of the crisis, we show how, at the background of constant mistrust to authorities, COVID-denialism and vaccine abhorrence grew. We detect micro-reinforcement patterns of persuasion for hesitant users and unmask the complexity of networked distrust as an interplay of Telegram affordances, issue saliency, and number of interacting commenters. We show that cumulation of opinion in closed-up networked discussions of decentralized nature needs to be assessed on at least two levels—the level of a post (and the comments to it) and the level of the overall discussion.

Social Media Networks

| PART 2 |

Chair: Svetlana Bodrunova

Thursday, June 23

17:15–19:45 UTC+2

Discourse of Complaining in Social Networks in Russia: Smoothing Out Emotions or Solving Problems?

Kamilla Nigmatullina, St.Petersburg State University

Social networks have become a milieu for expressing dissatisfaction, support, and, in general, social tension. During the COVID-19 pandemic, the need of the audience to find solutions and answers from the authorities and professional journalists became especially acute. The study poses research questions on whether and how networked communication can provide space for deliberation and problem-solving in response to user complaints. After detecting 300+ complaints in user comments on VKontakte and Instagram in 10 Russian regions in November 2020 and February 2021, we assess the topicality of complaints, as well as authorities'/media responsiveness and platform affordances in relation to it. We also assess the dominant discourse in linguistic categories and virality of complaints, and make conclusions on the potential for conflict growth vs. possible conflict resolution. Our results show that local media and authorities react differently to the increase in the intensity of complaints; however, they both feel pressure to get more involved; thus, online complaints are efficient in starting micro-deliberation. The state formally encourages communication between residents and the authorities through both personal accounts of officials and accounts of local media, thus changing the roles of local media in public deliberation and issue resolution. The result is a complex discourse that is reshaped and equally dependent on political, media, and social actors.

Virtual Market as Networking Space: Conceptualizing Phenomenon with Digital Labour Platform Case

Kerstin Pezoldt, Technische Universität Ilmenau, Tatiana Lukicheva and Olesya Veredyuk, St. Petersburg State University

In the digitalizing world, market as a «core of the basics» of the classical economic system is increasingly understood as a marketplace, online venue, platform, i.e. a space and from this perspective perfectly fits the definition of social media networks. It is evolving into a category not only and not so much of economic relations, but of social, or more definitely, socio-economic relations. The scientific comprehension of these processes is somewhat lagging behind and is characterized by a certain degree of fragmentation between fields of knowledge. Thus, the concept of such social media networks increasingly demands for the synthesis of the sociological,

economic, communicative, and technological aspects. New developments of a digital economy do not abolish market principles, but optimize them and bring them to a new level of social and economic interactions.

Digital labour platforms (DLPs) have become precisely such intertwining of economic and social in virtual space. From an innovative business technology, in a few years they have become an established segment of the labor market. They function under rules that do not always match the norms of the traditional market model. It is obvious that DLPs are not a short-term phenomenon, but a manifestation of profound transformational processes of socio-economic nature (in the public sphere).

The aim of the announced presentation is to give scientific reflection and conceptualize the DLP phenomenon, namely, to identify the reasons of its nature, principles, forms, conditions and future prospects in terms of the imperative to find a unity/balance of social, technological and economic interests in today's digital society. The structure of the presentation is designed to include the following sections: crowdsourcing as a principle of DLPs, digital labor platforms as a new model of employment, platform labour market: social environment factors, «failures» of the platform labour market and need for state regulation.

“Please, Use Your Best Judgement”: Authority vs Moderation in the Creation of Knowledge on History Subreddits

Daniela Linkevicius de Andrade, Universidade de Brasília

For the last 30 years, the web has been used as a space of debate and knowledge creation, including historical knowledge. It has fostered the emergence of several communities dedicated to discussing topics about history. Thus, the digital space might have the power to provide a more democratic history that relies on the inclusion of different voices in historical sources. But at the same time, it also raises questions about editing and authority.

When attempting to understand authority relations on the web, one factor gains special prominence—moderation. Moderation involves actions of exclusion, organization, and establishment of norms; thus, moderators' decisions influence everything seen, valued, and said by web users. Here, we aim to understand the dynamics of knowledge creation considering moderation bias.

Our focus is to identify the role of moderators in the creation of knowledge on the major Reddit history forums by analyzing how moderators and users established authority relations. For that, we developed a mixed-methods approach: we analyze these forum's rules and perform temporal social network analysis based on dialogues established on them.

The analysis shows that the rules have become progressively more extensive and stricter over the years, creating appropriate ways for posting submissions and commenting. When comparing these rules with the networks of dialogues, we note that forums with more strict rules might inhibit the active participation of most users.

Although the web offers the means for users to become authorities through the argument they post in the forums—increasing the plurality of voices in this space—just a few dominate the restrictions laid out in the rules. Thus, moderators gain prominence: they determine the rules that a user must follow to become an authority, but by restricting the debate through the rigidity of the rules, they create the conditions to become the central authorities.

Assessing Electoral Potential by Interest Groups in Social Media in the Context of Russian Political System

Darja Judina, St. Petersburg State University

The aim of our study was to make a comparative assessment of the electoral potential of the main Russian political parties, formed in social media. Official communities of parties on the Vkontakte social network were selected for study. To assess the electoral potential of each party, in addition to quantitative characteristics of communities, we studied the quantitative and qualitative characteristics of interest groups seeking support among the audience of each community. The parties with the largest number of supporters were the Navalny Team and the Communist Party of the Russian Federation. We carried out a qualitative analysis only of those groups that addressed the audience of the Navalny and Communist Party communities. An analysis of interest groups showed that the themes and goals of these communities correspond to the ideology and political actions of both parties. To assess the possibilities and limitations of the proposed method, we compared the results of our assessment of the electoral component according to data from Vkontakte with the results of the election to the Moscow City Duma in 2019. The conducted research contributes to methods of measuring the electoral potential of parties through the assessment of interest groups seeking support from the audiences of these parties in social networks.

Network Analysis of Z Gen Political Participation in Youth Parliament

Olga Ignatjeva, St. Petersburg State University

Conventional forms of political participation of young people, especially generation Z, which becomes the most extensive cohort of this social group, based on work in youth parliaments, governments, chambers, activist forums, where youth problems are denounced. At the present stage the role of social elevators in politics is performed by a network of youth socio-political organizations, the importance of political parties in the political socialization of the younger generation also remains quite high. Representatives of the power elite encourage the political activity of young people in the form of volunteer activities, promotion of projects, and representation of youth interests in power structures. Youth divisions of political parties (Young Guard of United Russia—MGER, Young Socialists of Russia—Just Russia party, Youth Yabloko) have a positive value for political socialization of zoomers. However, often the role of established channels of mobility to power for

young people is formal, imitative in nature. The study of D.V. Trynov and Y.Y. Kazantsev showed, using the case study of the Sverdlovsk region, that only municipal elections serve as a real channel for young people to move to power, while the promotion to higher representative and executive bodies is difficult for young people. A weak point in the political socialization of Generation Z in a conventional way is also a weak representation of public authorities in social networks, which are an important source of information for digital natives. The purpose of the proposed study is to conduct a network analysis of the political participation of Generation Z in the Youth Parliament, using the example of the Youth Parliament of the Leningrad region, taking into account the career development and social capital of its representatives.

Social Media Networks

| PART 3 |

Chair: Svetlana Bodrunova

Friday, June 23

10:00–12:30 UTC+2

Mapping Crypto: Analysis of Cryptocurrency Controversies Based on Latour's Approach

Kseniia Alikova, BDC Consulting

"To the Moon!" – write crypto-enthusiasts on Twitter. Tabloids are full of news about the rapid ups of new altcoins. The excitement around cryptocurrencies is fueled by Bitcoin's growth (from \$1 to \$47,000 in ten years). Researchers proved that public sentiment has a greater impact on the price of cryptocurrencies and vice versa [Garcia, Larch, Peter etc.].

This market is characterized by large volatility, lots of frauds, and asymmetric information [Antonakakis Nikolaos and al., 2019]. Despite the declared advantages, cryptocurrencies are one of the most striking manifestations of the "risk society".

The discussion about cryptocurrencies still has a variety of discussed aspects and a plurality of positions. The mapping of academic research on cryptocurrency (2010–2021) demonstrated its complexity and the lack of consensus about several issues, like its definition, the impacts on the economy etc. However, the proponents of all these positions, speaking theoretically, didn't disclose the position of the actual users of cryptocurrencies. Based on Latour's idea of 'follow the actors' we map the crypto community controversy and trace their connections with discourse, technologies and other actors in the cryptocurrency field [Latour 2011].

Using the InfraNodus tool [Paranyushkin, 2019] we analyse crypto discourse and identify the structural gaps in the network on Twitter. The main themes are identified according to the Louvain community identification algorithm [Blondel et al, 2008].

Findings:

- although the well-established term "cryptocurrency community" is often used by researchers and media, there is NO single community of cryptocurrency users—it's separate communities.
- discourse is more positive on Twitter than in academic research.
- decisions in this market are based on news and rumours.

So exploring the cryptocurrency controversies by cartography avoids the problems of the ambiguity of this field and takes advantage of the digital network study.

Data encoding for social media: Comparing Twitter, Reddit, and Telegram

Ivan Blekanov, St. Petersburg State University

Social networks play an important role in discussions of major economical, political and social events whether in the form of user messages or articles, published by major news agencies and experts. There are a variety of platforms where opinions and discussions are common and, as such proper data collection and analysis is important for recognizing platforms in the context of positive examples such as information reach (helpful in informing people on emergencies such as epidemics), and negative ones like fake news spreading and many other roles.

In addition, research on data collection has proven to be one of the major driving forces in creating robust and interpretable natural language processing models. Studies on social networks are especially useful as they encompass a major portion of all text content on the internet. Comparing different social network platforms, assessing their similarities and differences both with traditional datasets and with each other can be done in a variety of ways. General statistical approaches (length estimation, timelines of posts and comments etc.), complexity measures (a variety of linguistic measures, aimed at assessing the potential difficulty of text), and temporal features (engagement characteristics, spread of information etc.) are used to provide a detailed comparison between reddit, twitter and telegram—major platforms for news and corresponding discussions. Authors provide core ideas of data collection and data analysis on social media platforms and conclude the results in the form of key similarities and discrepancies between each platform.

Experimental Evaluation: Can Humans Recognize Social Media Bots?

Maxim Kolomeets, St. Petersburg Federal Research Center of the Russian Academy of Sciences (SPC RAS)

Social media bot detection and bot combating is a novel cybersecurity area due to malicious bots being used in various attack scenarios, such as fraud, misinformation, control of malware-based botnets, reputation hacks, and other malicious activity. Meanwhile, most of the existing bot detection solutions are based on supervised machine learning methods that are very dependent on the quality of training datasets usually labeled by human annotators.

In this paper, we test the hypothesis that the core reason for such bot detection systems to be not as accurate as expected—is that bots are now so sophisticated that human annotators cannot detect them better than random selection. We conducted an experiment, where humans try to recognize VKontakte malicious bots. Then we compared "human" answers with "ground truth" bot labels ('a bot' / 'not a bot'). Based on the experiment, we evaluated the bot detection accuracy of annotators in three scenarios typical for cybersecurity but different in their detection difficulty: (1) among random accounts, (2) among accounts of a social network 'community', and (3) among verified accounts. The study showed that humans could only detect

simple bots in all three scenarios, but could not detect more sophisticated ones (p -value=0.05). The study also evaluates the limits of hypothetical and existing bot detection systems that leverage non-experts labeled datasets: balanced accuracy of such systems can drop to 0.5 and lower depending on bot complexity and detection scenario.

The paper also describes experiment design, collected datasets, statistical evaluation, and machine learning accuracy measures applied to support the results. In the discussion, we raise the question of using human labeling in bot detection systems and how it leads to cybersecurity issues. We also provide open access to collected datasets, experiment results, and software code to evaluate statistical and machine learning accuracy metrics used in this paper on GitHub.

Networked City: The Multiplicity of Urban Links and Nodes

Chair: Aleksandra Nenko

Thursday, June 23

13:15–15:45 UTC+2

Starting from the Street: Situating Urban Social Networks in Space-Time and Multi-Scalar Relations of Power

Claire Bullen, University of Tübingen

Responding to the call for papers to explore the complexity of urban phenomena in European urban landscapes and beyond, I will present findings from a research project that investigates social networks that cut across a highly heterogeneous street in Marseille, France. Often considered one of the most diverse cities in France, diversity in Marseille tends to be associated with ethnically-marked groups or impoverished neighbourhoods in both everyday conversation and within much social science research. As a result, little is known about the unequal and diverse relations that connect and separate social groups and social spaces within and beyond Marseille. This is where a historically and geographically situated analysis of urban webs of relations can offer a powerful heuristic, transcending binary thinking that continues to underpin much of urban social theory (Çağlar and Glick Schiller 2021, Ryan 2021).

With their layout and use reflecting changing urban logics, streets are part of the urban infrastructure that supports everyday civic and commercial interactions, disperses traffic to neighbouring districts and makes connections with social spaces within and beyond the city (Suisman 1989). The street under study is one of the longest in Marseille, joining a state-led transformation of former docks into a central business district, a stigmatised, racialised stretch associated with the visible presence of post-colonial migration and a part undergoing gentrification by Marseilles' burgeoning 'creative classes'. Drawing on ethnographic fieldwork and qualitative and biographical social network analysis (e.g., Brandhorst and Kryzowski 2022, Kindler 2021), with different users occupying distinctive social positions along the street, this network approach has considerable potential to move beyond bounded thinking about socio-spatial relations, shedding light on the production, representation, and experience of socio-spatial difference in Marseille and beyond.

Interurban Network of Global Service Companies in Former USSR Region

Maria Podkorytova, ITMO University

The paper observes a case-study of intercity networks within a region of the former Soviet Union (FSU). The dataset comprises structures of the global advanced producer service firms within the region in 2015 and 2018. The networks are constructed following an assumption that interaction between the offices of the same company provides connectivity between the cities. Comparing two networks of FSU cities for the years of 2015 and 2018, authors demonstrate the network restructuring within the FSU space.

Also, stochastic degree sequence model (SDSM) had been applied to the network structures. SDSM provides a scope of knowledge on relative estimation of connectivity compared to a set of quasi-random networks. The results of SDSM employment highlight ongoing intraregional fragmentation and an increasing gap between capitals and their hinterland. The considerable over-connection between capitals, the improving connectivity between cities of the same country, the decreasing average node connectivity and Moscow featuring as strongly under-connected node are the attributes of ongoing puzzling within the post-Soviet region. It is supposed that intraregional uncertainty and inequality are reproduced and strengthened in the structures of the global service firms.

Scalable Spatio-Temporal Analytics Framework for Urban Networks

Yuri Bogomolov, ITMO University

Our life happens in space and time therefore real-world events are represented with spatio-temporal data. The widespread use of technology in modern cities fuels the rapid growth of urban spatio-temporal data. Available datasets attract increasing attention of the researchers.

Urban activities often can be described as interactions between actors. Examples include human mobility, communication and even social media activities. Despite the variability in the nature of these datasets they share the important commonality: data represent transactions between objects happening in space and time. We refer to such data as "spatio-temporal transactional data" (STTD).

Our study proposes a universal STTD data model, which allows us to define and re-use common analytics, modeling and visualization techniques across spatio-temporal transactional datasets. The STTD could be represented as a set of actor objects and a set of binary transactions between the objects. These two sets form a spatio-temporal transactional network (STTN).

Urban networks consist of multiple source datasets, therefore network construction takes significant efforts. We implemented the first version of the framework that allows us to standardize data retrieval and modeling steps, implement them once and share with the community. Recently we leveraged SSTN to scale urban commute

analysis to 12 cities. Now we are able to leverage the network construction functionality, common spatial computations including spatio-temporal aggregation and filtering, network routing and popular spatial interaction models (the gravity and radiation models). Our plans include applying the framework to geo-tagged social media, urban transportation and telecommunication datasets and expanding the set of supported techniques, including traditional network analysis and graph neural network approaches for pattern and anomaly detection, impact assessment, structural inference, network embedding, descriptive and predictive modeling.

Everyday Activity Networks Allocated through Public Participation GIS

Anastasiia Galaktionova, ITMO University

Everyday activity network is a network that unites the house of a respondent with urban facilities used by her on an everyday life basis.

Mapping of everyday activity networks is possible with public participation GIS when a person is allocating her home place and daily destinations on a map.

The dataset analyzed in this paper was received during mapping of the used urban services by citizens of St. Petersburg conducted in late 2020—early 2021 with “Mapsurvey” platform. 271 home places and 1726 facilities were marked. The facilities were represented by places of walking, working, education, culture, shopping, sport and beauty, healthcare, entertainment and eating.

The socio-spatial parameters of EAN were analyzed, such as the size of the activity space formed by the EAN, the average number of links inside of the St. Petersburg EANs, medium length of links inside EANs, and the social parameters of EANs based on the socio-demographic data of the respondents. Analysis of the EANs shows tendencies of daily use of facilities, in particular, territorial distribution of large and small EANs and qualitative characteristics of EANs of different social groups. The network nodes mostly include facilities that provide services related to walking, eating, shopping and working. Combining EANs with the city map shows their numerous overlays in the city center. Furthermore, the center dominates not only in providing services related to work or culture but also to cafes, restaurants, walking and entertainment. This finding is confirmed by the amount of time that citizens spend on the trip in order to use services. It means that EAN' nodes located in the city center have larger accessibility buffers than EAN' nodes presenting the same facility located on the city periphery.

The findings reveal characteristics of urban space quality and could be applied in managing a more socially responsive and spatially sound distribution of urban services.

Spaces of Everyday Practices: A Tool to Define Real Structure of the City Based on User-Generated Online Data

Aleksandra Nenko, ITMO University / Centre for German and European Studies, St Petersburg University – Bielefeld University

This paper addresses the question of defining the “real” structure of a city aimed at better urban management and distribution of the city resources, since this structure does not always correspond to the city administrative division. Here we define the structure of the city based on the user-generated online data which gives evidence about the usage of the city space in the context of everyday life practices. The motivation behind the paper is to present the method of defining spaces of everyday practices based on the user-generated online data. Taking from a sample of 184,759 venues and 2,648,965 comments from 933,645 users derived from the Google Places in St. Petersburg we build user-venue and venue-venue networks, where users and venues are connected through check-ins and venues are connected through users. We develop a clusterization technique to define the units of the geographically proximate and socially similar venues. Further we compare the map of such units with the administrative division of St.Petersburg on two different scales: at the level of agglomeration and at the level of administrative districts. We describe the formation of borders and connections which cause matches and inconsistencies between administrative boundaries and SEPs, such as natural and artificial barriers, transportation and infrastructural connectors.

Statistical Network Modelling

Chair: Peng Wang

Friday, June 23

10:00–12:30 UTC+2

Multilateral Security Cooperation beyond the Cold War: Temporal Modeling of International Military Deployments Networks

Artem Maltsev, HSE University

This paper presents an empirical study of the diffusion and co-evolution of interstate practical defense cooperation networks after the end of the Cold War. Recent IR literature strongly suggests when one state chooses to create, maintain or dissolve security cooperation ties with other countries, it considers both individual characteristics of its partners and its current regional and global security surroundings as a whole. At the same time, the latest quantitative studies show that some forms of security cooperation, such as formal defense obligations, appear to be stable and rigid across extended periods of time, while others, e.g., international arms transfers, allow for more changes. However, it is still unclear how short-term interstate cooperation affects more enduring international security structures as a whole. To unravel these complex temporal interdependencies, this article proposes a dynamic model of previously unexplored networks of international deployments of military personnel. The empirical base of this study combines already existing datasets from 1985 to 2015 that include formal defense alliances, joint participation in armed conflicts, joint military exercises, international arms sales and military technology transfers, and also presents an original dataset of international military deployments, that was collected based on IISS Military Balance yearbooks and various open sources. The statistical model involves two most prominent approaches to inferential longitudinal network analysis: Stochastic Actor-Oriented Model (SAOM) and Temporal Exponential Random Graph Models (TERGM). The results demonstrate that in the absence of high institutional dependencies that are associated with heavily asymmetrical “client-patron” relations of the Cold War era, states actively seek to cooperate across transitive networks of trusted partners.

Stochastic Diffusion Processes in Agenda-Setting: Interrelation between Official and Public Discourse

Natalia Ryabchenko and Olga Malysheva, Kuban State University

Digital technology changed the core aspects of democracy and democratic representation. To reveal the underlying processes, key actors and prevalent ideologies that lead to agenda-setting, we developed a methodology based on constructing and analyzing the model of socio-political agenda formed in the online space. The model of the digital socio-political agenda is a multidimensional network

comprising the Official Discourse and the Public Discourse dimensions that exist as combinations of multiple layers, different for each dimension. The notion of a multidimensional network is premised on the salient property of nodes, or entities, from one dimension to interact with nodes from another dimension. This means that entities of digital socio-political agenda can interact in different dimensions with different efficiency of diffusion processes. Diffusion processes can be described by two states. When the weight of inter-level interactions is not high enough ($\text{diffusio_degree} \approx 0$), each dimension behaves as an independent multi-layer network. Thus, two parallel agendas are formed. When the weight of inter-level interactions is high enough, the dimensions become intertwined, so a common digital socio-political agenda is formed.

To model the Public Discourse dimension, we used messages retrieved from Twitter and Facebook platforms published in March–September 2020—1.900.000 and 1.150.000 messages based on the keyword ‘coronavirus’ and ‘constitution’ correspondingly.

To model the Official Discourse dimension, we used news items published by Interfax, RIA Novosti and TASS agencies in March–September 2020—10.000 and 5.000 items based on the keyword ‘coronavirus’ and ‘constitution’ correspondingly.

The study shows diffusion processes are responsible for the dissemination of information across discursive fields, which are the structural elements of the digital socio-political agenda capable of triggering social action.

On the Dynamics of an Artificial Neural Network as an Image of Social Self-Organization

German Chernykh, St. Petersburg University

Complex dynamical systems (CDS) in the self-organized criticality mode (SOC) demonstrate universal behavior, despite different inward natures. Strictly speaking, SOC is a typical existence mode for CDS, such as human society. However, the CDS behavior can be unstable regarding small changes in its interaction structure and external environment. The predominance of individualistic motivation (selfishness) in actions of subjects of socium leads to chaos (anarchy). On the contrary, excessive pressure on subjects from the external environment and conservative components of the system structure forces CDS to simplify essential its dynamics (degradation of SOC). We observe the balance between systems' subjects' individual and collective activity. Based on our study of the artificial neural network [1], we present the specifics of dynamics from the point of view of processes characterizing human societies. We consider a predominance of collective activity [2] and interpret results in sociological conceptions covering states with a definite authoritarianism (totalitarianism) level. The common diagnosis is an inevitable degradation, i.e., simplification, because of a tendency for the entropy to decrease. Complex action takes place thanks to a few subjects with complex activities. But the majority demonstrates just a simple behavior. Persones' activity can cancel systems' predetermination and change of mentioned balance. Unreasonable changes could give rise to anarchy. The control parameter reflects the average individual historical memory of socium. Lengthy one could result in chaos. However, on the other hand, a short memory can be one cause of degradation.

Closure in Relations under Secrecy

Johan Koskinen, University of Melbourne

Triadic closure is generally seen as a mechanism for promoting trust in social networks. A third party may for example act as a guarantor that assures that norms are upheld or an independent arbiter in the dyadic interaction of a dyad. In situations where interactions may be risky, such as in covert networks, interaction is contingent on trust and closure has thus therefore been proposed as a key feature of covert networks. The creation and maintenance of trust through triadic closure does however involve a process whereby ties can be created as well dissolved. Simmel (1906), however, pointed out that 'every relationship between persons causes a picture of each other to take form in the mind of the other' and discussed how the willingness to engage in these, revealing interactions related to trust. If the nature of what is revealed in the interaction is risky and trust is low, you would expect actors to be reluctant to engage in revealing interactions. If they were to engage in revealing interactions at all, you would expect them to do so in a way so as to minimize how much they reveal and what happens with that information afterwards. One way would be to try to keep interactions dyadic, to try to avoid interacting with actors that were likely to also interact amongst themselves, because these actors could then compare notes and the initial actor could lose control over what is known about them. We thus predict that triadic closure would be lower in a context where what the relational behaviour reveals is more risky or less accepted than in a context where this is not the case. We investigate this in the context of two populations of young men who have sex with men (YMSM). Black YMSM operate in a community that has a norm that has traditionally been less accepting of homosexuality than what the norm in the white community is, relatively speaking. We use network data from a hybrid link-tracing sample of YMSM in Chicago and apply Bayesian data-augmentation and exponential random graph models to estimate the differential propensity for closure in sexual relationships among black YMSM relative to other race categories, controlling for homophily and geographical factors. We find that while there is no difference in the number of sexual partners between blacks and others, closure among black YMSM is lower than among other actors. The result supports the notion that actors may employ strategies such as anonymity or keeping it on the down-low to limit disclosure of that 'which is forbidden'.

On the Origin of Cultures: An Integral Model of Small Group Culture Creation

Nikita Basov, St. Petersburg University—Bielefeld University and Peng Wang, Swinburne University of Technology

In recent decades, the effect of social networks on the emergence of culture has been both empirically confirmed and questioned. Our paper argues this puzzling contradiction results from both theoretical and methodological gaps between different accounts of networks and culture—and offers a bridge across these gaps. On the theoretical side, we propose an integral model of culture creation that combines the previously separately studied ego and dyadic social network effects on cultural consensus and cultural tightness. We approach these effects across two major social network domains: instrumental and expressive. Namely, we argue that formation of a group's vocabulary of stable cultural elements (cultural consensus) is driven by personal egos' instrumental social ties (e.g., work-related advice ties). Meanwhile, relations between these cultural elements that give them contextual meaning (cultural tightness) emerge in dyadic expressive social ties (e.g., friendships). On the methodological side, we open up an opportunity to juxtapose and disentangle the different social network effects on cultural consensus and cultural tightness by introducing multilevel exponential random graph socio-semantic network modeling. This method is capable of estimating the relative contribution of ego and dyadic social network ties to cultural consensus and tightness within the same model. Applying our method to a unique longitudinal mixed socio-semantic dataset obtained through five two-year-long ethnographic studies of European artistic collectives, we find support for our theoretical model across creative groups embedded in diverse social and cultural contexts. The approach and our findings open up new opportunities for and contribute to the sociology of culture, social network analysis, and symbolic interactionism, both with respect to studies of creative collectives in arts, science, business, and activism, and beyond.

Networks of International and Supranational Gamblers

Chair: Alexander Kuteynikov

Friday, June 24

13:15–15:45 UTC+2

Research on the Development of China's Foreign Economic Relations with Asian and African Countries in the 2010s Based on Network Analysis

Aleksandr Zabolotskiy, HSE University

The article is devoted to the research of development of China's foreign economic relations with the countries of Asia and Africa. China's increasing leadership role in the region has led to the emergence of the term "China centrality". Network analysis was chosen as the main research method in this work, as it allows to calculate the indicators of China's centrality and the countries of the region and compare them with each other, as well as to draw conclusions about the applicability of this term in relation to China.

The research is based on international trade data between China and Asian and African countries for the period 2000–2020, published by The United Nations Conference on Trade and Development (UNCTAD) and the World Bank. The advantages and disadvantages of the created network model are considered.

The change of the network during the 2010s was shown. The analysis made it possible to identify the factors of development of this network and the key elements of the structure, to make a forecast on the further development of the network of foreign economic relations, and to make assumptions about the factors that will have the greatest impact on it.

Financing of UN Bodies and Organizations: How It Is Presented in the Form of Graphs

Alexander Kuteynikov, St. Petersburg University

The paper contains the results of research on the funding of UN bodies and organizations that are members of the United Nations System Chief Executives Board for Coordination (CEB). The data source is financial statistics from 43 United Nations entities currently collected annually by the CEB Secretariat. A network analysis of the financing of UN bodies by states has been carried out. All three types of financing are taken into account: Assessed contributions, Voluntary core (un-earmarked) contributions, and Voluntary non-core (earmarked) contributions. Nodes of graphs are marked by donor countries, edges are the amounts of funding by states. The results of the study are visualized. The study revealed six clusters organized around the institutions that receive the most funding: DPKO, WFP, UNICEF, UNDP, FAO and the UN Secretariat.

Network Analysis of Political and Policy-Making Domains

| PART 1 |

Chair: Artem Antonyuk

Friday, June 24

13:15–15:45 UTC+2

Political and Economic Influence Groups in the Modern Prc: Interest Lobbying Architecture and Features of Network Configurations

Kirill Serebryakov and Gleb Lapshakov, St. Petersburg State University

As part of our study, we analyze the biographical data of members of the State Council, the CPC Central Committee, heads of the State Asset Supervision and Administration Commission (SASAC) and top management of companies over which the Committee supervises and controls since 2003 (the moment the SASAC was created). This institutional architecture was laid down by the reforms of the Chinese Prime Minister Zhu Rongji (1998-2003) in order to optimize the economic processes in the country, to form the economic discipline of China's largest industrial giants. With the help of a biographical array, a series of networks is formed, which we compare and highlight the main clusters—friendly and clientele network structures, which are cliques. We are conducting a comparative analysis of these cliques, their composition, and proximity to the Chairman of the CPC. Lobbying channels are being explored. In this work, we start from a number of assumptions. Firstly, the hybrid and closed nature of the Chinese governance model is an excellent environment for merging political and business elites. Secondly, thanks to the merging of the party and the state, all political and economic figures are freed from the struggle for power as for status. Consequently, the struggle for administrative and material resources, designated as a political agenda beneficial to cliques, is being updated. Thirdly, the collective-consensual and inherently bureaucratic management system does not allow for an even distribution of attention and resources between all cliques, so there is a struggle, lobbying, and promotion of ideas. Finally, the key speeches of the Chairman of the PRC form the requests of the clique to which he belongs (for this reason, we compare the "behavior" of the network, its composition and the news agenda). The ultimate goal of the work is to identify the dominant influence groups in Chinese politics and economics, as well as the mechanisms by which this influence is ensured.

Environmental Protests in Shies

Tatyana Ukhova, Timin Daniil, Popkov Daniel, Mylnikova Polina and Pustovalova Svetlana, St. Petersburg State University

Within the framework of this project, an analysis of the relationship between various participants of mass protests against the construction of a landfill near the Shies railway station in the Arkhangelsk region in 2018-2021 was carried out. Based on the data obtained during the event analysis, the network that emerged during the protests was formed and visualized, the main actors of this network were identified and the characteristics of the identified connections were compiled. The basic indicators of the built network, the activity and influence of certain actors of interaction were also analyzed.

The relevance of this work lies in the fact that modern protest actions have changed dramatically over the past decades, in particular, due to the development of information technologies and Internet resources. And network analysis, in our opinion, can show how such processes have affected the formation of political networks, as well as how the interaction between state and non-state actors has changed.

The study examines the protesters in Shies in the period 2018—2021. A network of protesters and government representatives in Shies was built and interpreted on the basis of the model of political entrepreneurship of M. Mintrom. The purpose of the study is to study the characteristics of the network protesting in Shies.

The analysis showed that the actors were divided into two groups: those loyal to the construction—local authorities—and those opposing them. However, it is difficult to draw a clear distinction between them, because the actors actively interact with each other. But due to the fact that the network members loyal to the construction of the landfill were slow to receive information, as well as to ensure interaction and control over resources, this conflict was prolonged.

Efficiency Research in Sociology and Social Sciences: A Bibliometric Analysis

Gregory Khvatsky, HSE University

Effectiveness studies in sociology have a long and quite noticeable history. Despite this, sociologists tend to note the absence of a concrete, unified definition of the concept of efficiency in the discipline of sociology as a whole. Meanwhile, other social sciences have been working with the concept of efficiency on all levels: theoretical, methodological, and empirical.

In sociology, however, this area of research is still considered to be underdeveloped. In spite of this, sociologists continue their work on defining efficiency, developing a typology of efficiency as well as operationalizing the concept. Thus, the question of how sociological views on efficiency are connected to the broader context of social sciences becomes increasingly important.

In total, we have analyzed more than 200,000 bibliographic records of articles in the fields of political Science, Public Administration, Sociology, Psychology, Economics and Management. Out of all the records, 4689 were related to the field of sociology.

By analyzing the field of effectiveness studies in all social sciences as whole, we have discovered multiple schools of thought developing in parallel. We have determined that organization research and management studies play dominate the landscape of efficiency research. Economic studies, working with all the various notions of "economic efficiency".

In the much narrower context of sociology, we have also discovered multiple independent and competing schools of thought. We have determined that sociologists are actively working on problems of different social aspects of being employed in different types of organizations, and efficiency of social movements.

Network Analysis of Political and Policy-Making Domains

| PART 2 |

Chair: Artem Antonyuk

Friday, June 24

17:15–19:45 UTC+2

Discovering Methodological Approaches to the Measurement of Social Movements' Political Impact: Bibliometric Analysis

Anna Sokol, HSE University

The theoretical development of social movements and how they affect the social spheres of life began in the 1970s and continues to the day. The existence of many different theories about social movements, each of which is correct, shows how complex a subject this is to study. Paradigms of study have changed from studying the social and psychological aspects of collective behavior to analyzing movements in political and socio-cultural contexts and identifying institutional development and political change factors.

To better understand the research trends in social movements literature, main works and authors, and boundaries of science dedicated to ecological policy, the best way is to use bibliometric analysis. Assessing research activity on social movements helps identify the national and international contribution to this field, the hot themes discussed by researchers, and research gaps in the field. This research describes patterns in the international published literature regarding "social movements". The study of this topic requires constant generalization and visualization of the materials, identifying new patterns of scientific development (Batagelj и др., 2019; Batagelj & Cerinšek, 2013; Maltseva & Batagelj, 2019).

Bibliometrics, or the statistical analysis of published works, was first described by Pritchard as a method "to shed light on the processes of written communication and of the nature and course of development of a discipline (in so far as this is displayed through written communication), through counting and analyzing the various facets of written communication" (Pritchard, 1969 , p.348). In this study we are going to shed a light on "social movements' scientific development of research.

Network Analysis of the Interaction between St. Petersburg Legislative Assembly Deputies

Ilya Savelyev and Dmitry Polikarpov, St. Petersburg State University

In the presented study, an analysis of the interaction of deputies of the regional parliament of St. Petersburg was carried out.

It is known that the United Russia party dominates the Russian political system, both at the federal and regional levels, and the same state of affairs is noted in the St. Petersburg parliament. Key political actors, which formally should be the nodes of interaction between deputies, may not be such in reality. Clarification, including this issue, is one of the goals of the work.

The subject of this study is the mechanisms and intensity of interaction between individual deputies and factions in the Legislative Assembly of St. Petersburg. The sample was 50 people.

We assessed the intensity of interaction between deputies through a number of primarily biographical indicators: affiliation with an educational institution, the presence of working and professional contacts outside the parliament, party and factional contacts, territorial ties, joint work in committees and commissions, intersections at official events. data from open sources (primarily Internet sources), personal pages of deputies in social networks (Vkontakte, Instagram), personal websites of deputies were used. The data were analyzed using the Pajek program by calculating the indicators degree of connection, closeness, centrality, betweenness, k-cores. Social network data collection method: the biographical method and the document analysis method were used as the main data collection method.

Based on the results of the study, we found particularly influential actors from the United Russia party and also identified the absence of a strong center through which information flows and decision-making processes would pass solutions. This study is relevant due to the fact that the analysis of interaction networks within the Russian political elite is practically not carried out

Together or Going Alone? A Multi-Level Network Model of Plurilateral Trade Relations

Kenneth Stiller, University of Oxford

When do collective aims trump strategic interests when it comes to negotiating preferential trade agreements (PTAs)? The number of regional integration organisations vastly increased in the aftermath of the cold war. Moreover, an ever-growing number of states negotiate and sign PTAs with third parties as a single group, representing a common interest. While depth of integration clearly defines the political space in which states navigate, an increasing number of moderately integrated groups of states decide to jointly negotiate trade agreements, without any prejudice to member states' rights to negotiate bilateral agreements. For many states, this offers new opportunities as they face the choice whether to negotiate agreements individually or as part of a larger group.

This paper employs quantitative methods and network analysis in order to analyse (i) the political and economic benefits and costs of negotiating as a group as well as (ii) the conditions under which certain states decide to go alone, rather than being part of a (potential) coalition. Using multilevel-network models, the relevance of trade relationships and previous trade agreements both on international and regional level is scrutinized in a large-N analysis. This approach takes into account possible spill-over effects of agreements signed by single member states of regional IOs as well as network effects influencing the choices of potential accession candidates to IOs. A number of interviews with trade representatives and negotiators shed light on the rationale of the decision between individual and group negotiations.

Gender and Social Networks

| PART 1 |

Chair: Elisa Bellotti

Friday, June 24

13:15–15:45 UTC+2

Gender and Social Network Analysis

Elisa Bellotti, University of Manchester

The aim of the presentation is to illustrate the contribution that social network analysis can make, and has made, to sociological gender studies. Nearly absent in the thought of classic sociologists, gender came to the foreground with the first and second waves of feminisms, where not only women became an interest subject of scholarly research, but gender differences, inequalities and biases started emerging in nearly all social domains. While sociological theories of gender can be grouped in three main categories—macrostructural theories, microstructural theories, and interactionist theories—less attention, both theoretically and empirically, has been paid to the essential role that social networks have in forming, reproducing and challenging gender inequalities. Gender differences have however been extensively investigated by social network scholars, especially in the areas of socialization, personal networks, organizations and scientific environments. By reviewing the empirical finding of social network studies, we identify the network mechanisms that contribute to the formation and evolution of gendered social networks in pre-scholar and scholar age, the role of foci in segregating personal relationships of men and women and the resources they can access to, and the consequences that these network structures, and the gendered cultural expectations they carry about, have in organizational and academic settings. By looking at how gender shapes network formations, and how these formations then inform gendered outcomes, we aim to complement sociological studies of gender with the network perspective, therefore specifying further the role of microstructural theories in linking interactionist processes and macrostructural outcomes.

Perception and Privilege

Jan Schulz, University of Bamberg

Inequality perceptions differ along racial and gendered lines. To explain these disparities, we propose an agent-based model of localised perceptions of the gender and racial wage gap in networks. We show that the combination of homophilic graph formation and estimation based on locally limited knowledge can replicate both the underestimation of the gender or racial wage gap that empirical studies find and the well-documented fact that the underprivileged perceive the wage gap to be higher on average and with less bias. Similarly, we demonstrate that the underprivileged perceive overall inequality to be higher on average. In contrast to this qualitative replication, we also show that the effect of homophilic graph formation is

quantitatively too strong to account for the empirically observed effect sizes within a recent Israeli sample on perceived gender wage gaps. As a parsimonious extension, we let agents estimate using a composite signal based on local and global information. Our calibration suggests that women place much more weight on the (correct) global signal than men, in line with psychological evidence that people adversely affected by group-based inequities pay more attention to global information about the issue. Our findings suggest that (educational) interventions about the global state of gender equality are much more likely to succeed than information treatments about overall inequality and that these interventions should target the privileged.

Societal Pressure or Free Choice: What Matters for Gender Composition of Informal Networks in the Workplace?

Deniza Alieva, Webster University Tashkent

In present paper we would like to address the role societal norms (i.e., socially acceptable behavior and gender-attributed stereotypes) play in shaping males' and females' social networks in higher educational institutions. The universities, as a source for networks evaluation, were chosen because of their proclaimed intention to promote gender-equality policies and stereotype-free environment. However, in some cases even with application of these policies the culture and the societal norms seem to have influence on connections representatives of different genders have in the workplace.

We have collected data in two Universities: one located in Uzbekistan and another—in Russia. The network data of administrative and academic staff were collected from 52 participants in the first case and 49 in the second. The respondents provided information on their background and gender compositions of their ego-networks, indicating the strongest and moderate relations in them. In addition, critical incidents analysis was conducted in order to evaluate the influence of societal norms on the networks. The results demonstrated high impacts the national culture has on networks' composition. Our study proved that in case of Uzbekistan it is in major part determined by the culture and societal norms, while in Russia there is no such strong effect. The respondents clearly stated it through critical incidents discussions and collection of participants' opinions. Moreover, the personal background of respondents acts as a moderator in gender proportion in social networks.

The results of the study help to reveal the problems males and females working in HEIs in these two countries might face in terms of interaction within the organization. For example, in extreme cases the necessity of completely changing the network composition and decreasing the intensity of interactions with opposite gender were reported.

Gender and Social Networks

| PART 2 |

Chair: Elisa Bellotti

Friday, June 24

17:15–19:45 UTC+2

Gendering Diaspora Knowledge Networks: Male Bonding and Female Exclusion

Antoshchuk Irina, University of Amsterdam / St. Petersburg State University

Studies on diaspora knowledge networks (DKN), transnational collaboration networks of highly skilled migrants and scientists united by common origin, emphasize network as the central organization principle standing behind DKN positive impact on knowledge transfer. Yet, social network analysis is rarely used to understand the internal workings of DKN and its effects. DKN research also is inattentive to gender issues, though scientific networks are well-known to be gendered across various research fields. My study of gender disparities in DKN of Russian-speaking computer scientists (RCS) who migrated from Post-Soviet space to the United Kingdom in the 1990s–2000s, seeks to partially fill this gap. My question is whether diasporic commonality mitigates the gender imbalance so pervasive in scientific collaboration? What gender dynamics characterised the formation and maintenance of DKN, the distribution of its benefits? Methodologically the paper is based on quantitative and social networks analysis of publications (298 RCS) and co-authorship ties (214 RCS) combined with thematic analysis of 53 semi-structured interviews. I found that DKN is profoundly gendered in its structure and generated advantages. Male scientists maintain a greater level of diasporic collaboration, and it occupies a more important place in their scientific research. Deeper involvement in DKN, maintenance of more and denser diasporic ties, higher centrality and influence in the network enables them to benefit from knowledge and information flows, what in turn enhances scientific productivity and output and increases chances for a successful academic career. Main roles and relations in the network are male-dominated, granting more influence and benefits to men, while disadvantaging women. This pattern is explained by mobilization of masculinities and male bonding in the academic context, supported by multiple cultural mechanisms, from Russian language use to Post-Soviet academic culture.

Neural Networks and Gender: Social Research

Daria Galina, St. Petersburg State University

Artificial intelligence is created with the direct participation of a person, which affects the principle of operation of mathematical models and its final result. Traditional approaches to the perception and analysis of the modern world project binary norms onto the technological sphere of research, consolidating their

positions. However, modern sociologists put the issue of translation of traditional norms on the agenda and propose new inclusive approaches to the study of new technologies.

This sociological study has no analogues among Russian studies. The purpose is to identify, through a sociological survey, the presence of traditional gender norms in the work of modern neural networks. Using neural networks and keywords "Man" and "Woman", 20 images were generated. As a result, some images turned out to be clearer and easier to perceive, some only vaguely resembled people, and in some pictures it was quite difficult to understand what was depicted. Then the respondents were asked to determine who is depicted in certain pictures: a man, a woman or else. 82.2% of respondents correctly identified the images generated using the word "man", and 82.7% "woman". 74% of respondents saw obvious secondary sexual characteristics and traditional gender characteristics. More than half of the respondents relied on outlines and shapes. So, soft and smooth lines were taken as the designation of women, rough and sharp—men. A 1/3 of the respondents also relied on the color scheme of the images: dark colors—defined a man, bright and light—a woman.

The results of the study confirm the presence of traditional gender constructions in the work of neural networks. Neural networks generate a stereotypical muscular and feminine type, discriminating against people who do not fit traditional gender norms. This may cause difficulties in the future, for example, in identifying persons during automated passport verification or payment for purchases using a person's biometrics.

Core Discussion Network Size Is Positively Related to Academic Performance for Women

Sofia Dokuka, HSE University

Academic performance is one of the key determinants of professional success. Social integration within the classroom is positively associated with academic performance. Social integration is usually considered as embeddedness in classroom networks, while literature shows [Elmer et al. 2019] that different types of connections are beneficial (e.g. strong ties). Thus, it is reasonable to hypothesize that academic performance may be related not only to integration within the classroom, but also to embeddedness in close ties.

In order to identify the association between the academic performance and strong ties embeddedness I investigated the relationship between the core discussion network size and academic outcomes. I used the data from the Russian Longitudinal Panel Study of Educational and Occupational Trajectories, which tracks 4,400 students who participated in the Programme for International Student Assessment (PISA) in 2012. In 2015 the information about CDN was collected. The mean CDN size is 2.58 (SD=2.60), the median is 2, and the mode is 3. Overall, the distribution of CDN size is similar to prior work and suggests that there are a few individuals that constitute the core of the personal network [Mardsen 1987]. The relationship between CDN size and academic performance is different for men and women. For women for all three academic performance indicators (PISA, USE, and University

GPA) there are statistically significant positive correlations with the CDN size. For men the positive association between the CDN size and academic performance was found only for one performance indicator (PISA score). These results for women are robust for academic performance indicators after controls.

In this paper I demonstrate that strong social network ties may differently impact men and women. These findings are in line with the network literature, which indicates that men and women manage their networks in different ways [Szell & Thurner 2013].

Literary Networks of the Long 19th Century: Sustainability and Dynamics on the Micro and Macro Levels

Chair: Larisa Poluboyarinoa

Friday, June 24

17:15–19:45 UTC+2

The Resort Network of Long 19th Century Europe and its Literary Representations

Olga Kulishkina, St. Petersburg State University

The resort network of modern Europe developed over the course of the 18th and 19th centuries. Emerging at different times (first in Great Britain, then in France, then in Germany and Russia), all national spa centers in one way or another reproduce a single, taken from the Roman tradition of the term (as a result of direct "inheritance" or—as in Russia—through a foreign national settler) type of organization of living space. Being subordinated to the "dual purpose of curing and entertaining the sick" (Guy de Maupassant), this space turns out to be correlated with the idea of an "other" (different from normative-socialized) life. Separate segments of this single European network space of codified deviancy, linked typologically and genetically, can in turn be represented as bundles of various socio-cultural connections arising around specific spa "characters" (as an example—the literary and writing network of Baden-Baden resort). Finally, another type of connections correlated with the European spa environment is its literary representations, the 19th century European spa narrative, the main features and agents of which will be discussed in our report and visualized in the form of a network graph.

The English-German Aspect of Stefan George's Literary Network Connections

Elizaveta Burmistrova-Jennert, St. Petersburg State University of Culture

Translations from various European languages make up about half of the entire creative heritage of the German symbolist poet Stefan George, which indicates the extraordinary intensity of George's exploration of the European literary context. Traditionally, researchers primarily approach George's connections with literature in the field of Romance languages and, in particular, his personal contacts with French Symbolists. George's creative dialogue with English-speaking authors so far remains on the periphery of research interest. At the same time, the works of the English Pre-Raphaelite poets reveal moments of similarity with George's poetry at various levels: ideological, figurative, stylistic. George translated the works of J. Ruskin and implemented a number of his ideas into the German sphere. Of particular

interest is George's reception of Plato's ideas and the work of Dante Alighieri "through the mediation" of the Pre-Raphaelites. George's translations of Pre-Raphaelite poetry by E. Dawson, A. Swinburne, and D. G. Rossetti were published in the two-volume anthology *Modern Poets*. These translations are characterized by the desire to fit them not only into the German-speaking literature, but also into the context of George's own work. Another vivid example of the specifics of establishing Anglo-German literary ties by Stefan George is his creation of a poetic "triptych" in English, *A Youth Sang to Me on Evening and Autumn*, with subsequent auto-translation into his native German language. This work was a response to a poem by the British composer and poet S. M. Scott. On the one hand, George refers to the tradition of the English sonnet (W. Shakespeare), using at the same time elements of the figurative system of English Decadent literature. On the other hand, in the process of auto-translation, the poet enhances the structural, figurative and stylistic elements inherent in his own style, integrating this text into the creative heritage of his native language.

Ivan Turgenev's Austrian Networks

Larisa Poluboyarinoва, St. Petersburg State University

The intensive reception of Ivan Turgenev (1818–1883) in Europe began in the mid-1850s with the appearance of the first French and German translations of his "Notes of a Hunter." Especially in Austria, the popularity of the Russian author was unparalleled, so that one can speak of a group of "Austrian Turgenevians", to which writers, publicists and literary critics such as Ferdinand von Saar, Marie von Ebner-Eschenbach, Leopold von Sacher-Masoch, Karl Emil Franzos and others belonged. In the article the mechanisms of cultural transfer and the peculiarities of the "goods" to be transferred on the axis "Russia–Austria" will be investigated. Secondly, the human continuum of Turgenev's reception in Austria will be examined from the perspective of literary network research and a first attempt will be made to reconstruct Turgenev's literary network in Austria before the First World War.

Goethe and Social Network Analysis: Bildungs Concept in English Formation Novel of 19th Century

Anna Shikhova, St. Petersburg State University

This paper examines J.W.Goethe's influence on the literary world in Great Britain in the 19th century using social network analysis (SNA) as well as elements of the literary field and the cultural transfer analysis. For my research I chose three authors—Charles Dickens, George Eliot and Henry James—who will be represented as actors who spread Goethean narrative structure (known as Bildungsroman) in the English-speaking world.

The 19th century became a turning point for Goethe's influence on English culture: he was considered not only a writer but also a thinker, philosopher and intellectual authority. Thomas Carlyle who translated and published "Wilhelm Meister's Apprenticeship" played a significant role in this process and became the first

popularizer of Goethe's ideas and works in the English-speaking world. "Wilhelm Meister" made a mini-revolution in British literature becoming a prototype for a dozen works of English authors in the genre of formation novel. This narrative structure was differently absorbed and developed by Charles Dickens, George Eliot and Henry James and spread further among lesser-known authors. The goal of the paper is to analyze what elements of Bildungsroman were used by authors (nodes) and to identify strong and weak relationships (ties) between them.

05 // WORKSHOPS

Mixed Methods Research into Social Networks //

Betina Hollstein, University of Bremen

Wednesday, June 22

10:00–15:45 UTC+2

The workshop focuses on the use of mixed methods research designs when studying whole and ego-centered social networks.

In the first part social network qualitative research and the principles of mixed methods research designs and its contributions to the study of social networks are introduced, pointing out advantages and challenges of this approach. Examples of mixed methods networks studies from a variety of fields of research are presented, including job mobility and organizational research. The second part focuses on mixed methods network data collection, including the use of visual tools.

Network Dependencies in Social Space, Geographical Space, and Temporal Space //

Johan Koskinen, University of Melbourne

Wednesday, June 22

10:00–15:45 UTC+2

Statistical analysis of social network data is becoming increasingly popular and is progressively adding new substantive insights to the literature. The intricate contingencies of social relations in networks that have been the key focus of network research—such as triadic closure—are also what make statistical analysis of networks more involved than standard statistical analysis. In particular, these contingencies vitiate standard assumptions of independent observations. However, the explicit modelling of these dependencies is the express purpose of some statistical models for networks. Here we deal with two such modelling frameworks. This workshop will introduce exponential random graph models (ERGM) and stochastic actor-oriented models (SAOM) for analysing network data.

A general introduction to statistical modelling of ties in a network will be presented and the use of ERGM and SAOM will be exemplified with application of these models to a number of example data sets. These quick hands-on demonstrations will use MPNet, and the R-packages statnet and RSiena, and to get the most out of these exercises it is recommended that you bring your own laptop with these programmes installed. The overall aim is to provide an overview and working handle on how the principled consideration of how the basic interdependencies of relational ties

extends to physical and temporal space. Some basic familiarity with social network analysis will be helpful.

MPNet program and manual: <http://sna.unimelb.edu.au/PNet>

Statnet tutorial: www.jstatsoft.org/article/view/v024i09/v24i09.pdf

Comprehensive RSiena manual (and additional resources):
<https://www.stats.ox.ac.uk/~snijders/siena/>

A useful tutorial on SNA in R: <http://www.bojanorama.pl/snar:start>

Multilevel ERGM Analysis with MPNet

Peng Wang, Swinburne University of Technology

Wednesday, June 22

10:00–15:45 UTC+2

In this hands-on workshop, participants will learn the fundamentals of estimating Exponential Random Graph Models (ERGMs) and Auto-Logistic Actor Attribute Models (ALAAM) with MPNet—a software developed to investigate the structural features of networks and how such structure may affect individual outcomes.

The workshop will start with a brief introduction to the overall logic of estimating (single-level) ERGMs/ALAAMs before introducing the recently developed multilevel ERGMs/ALAAMs. The latter class of models enables researchers to investigate the influence of structure at one level of analysis on structure at a different level, while taking into account the complex interdependencies that exist within and between levels. For instance, interpersonal networks between managers at the micro-level might interact with alliance networks of the organizations they are nested in. The workshop will also demonstrate how to use MPNet to model temporal network dynamics using Temporal ERGMs.

Throughout the workshop, participants will work through short exercises to get familiar with the graphical user interface and output of the MPNet software. Moreover, we will discuss various case-study examples that will provide the participants with a good understanding of the possibilities that multilevel ERGMs offer for social scientists.

Requirements: Some basic familiarity with social network analysis will be helpful. Participants are required to bring their own laptops with MPNet installed. Note that MPNet is not compatible with Mac OS without a compatible Windows parallel.

MPNet program and manual: <http://www.melnet.org.au/pnet>

Network Visualization Tools //

Camille Roth, CNRS / Humboldt University, Berlin

Wednesday, June 22

10:00–15:45 UTC+2

This workshop aims at presenting and illustrating the wide variety of approaches for the visualization of networks—be it about social networks, semantic networks, or both. To this end, beyond focusing on a series of tools and integrated data processing platforms, this session will adopt a comparative approach to identify and discuss the prospects, features and possible limitations of available techniques.

The goal is to equip participants with a critical feeling of the underlying assumptions made by a particular approach, in order to knowingly decide which one to use in which context (both from an epistemological and empirical viewpoint).

In particular, we will discuss two main types of approaches:

- All-Purpose Layouts.

On the side of social networks, we will cover classical and widely-used tools such as Gephi (its well-known large graph visualization abilities) and Pajek (whose use in social network analysis appears to remain widespread). On the side of text mining, we would shed some light on the Natural Language Processing (NLP) assumptions and methods that make it possible to build networks from text content and to represent semantic networks.

- Specialized Approaches.

We will present a diverse selection of integrated platforms whose task is to take care of most of the data processing workflow, from pre-treatment to visualization. Often, such platforms provide dashboards to examine arrays of datasets by implementing and applying a given network-analytic theory (e.g., following a specific set of hypotheses on what a cluster is and how their evolution can be measured). Here, beyond the aim of getting acquainted with these tools, we will emphasize the underlying theories and parameterizations which each platform follows—illustrating further this point by applying (when possible) distinct platforms on identical datasets.

Creating and Analysing Scientific Networks: A Hands-on Activity Using Open-Access Citation-Metadata //

Bilal Hayat Butt, DHA Suffa University

Wednesday, June 22

10:00–15:45 UTC+2

Researchers build new work on their own or others past work. It is attributed through the use of citations. It is one of the primary forms of acknowledgement for past work and thus acts as a form of measurement. Along with citations, other measures also exist such as social media attention, views and downloads of the article. However, amongst these measures citations are the least possible to malign. Even though self citations at the level of an individual or publisher are sometimes critiqued, it exists as a valid form of recognition. Scientists use the citation indexes such as WoS, Scopus or Google Scholar to analyse the research landscape within their domain. Science of science relies on citations from published research to gauge the scientific impact of past research. It is primarily done through proprietary bibliographic data sources of WoS or Scopus and other commercially available tools such as Dimensions, LENS or MAG.

Google Scholar, although free to use, is highly critiqued for indexing all the material over the internet. Also, it doesn't provide public access to its data. However, another bibliographic data source exists, namely, Crossref with over a billion citation links of registered DOIs. It is available as a public API upon which numerous commercial tools are built. It has over 85% citations as open-access in 2021 starting from 1% in 2017. It was mainly possible after the I4OC. This provides a great opportunity to work with a reliable data source that has publisher provided metadata. However, its API access is not intuitive for all. This workshop provides a scripted interface to access Crossref metadata for analysing scientific networks supplemented with OpenCitations. The workflow details creation of heterogeneous scientific networks, as well as its analysis. Datasets used are available to download from their respective websites.

This activity will be beneficial for early career researchers. A basic understanding of social network analysis will help, however, some introduction will be provided. Participants are required to bring their laptops with Python 3.9 installed. Few open-source libraries will be used (snap-stanford, pandas, DASK). The libraries can be installed using pip. Detailed instructions about installation will be provided prior to the workshop. Tentative topics include creating and analysing scientific networks (article citation network, author citation network, author collaboration network, co-citation network, bibliographic coupling), working with Crossref API, working with OpenCitations, centrality measures (degree centrality, betweenness centrality, closeness centrality, eigen centrality, PageRank). All topics will cover theoretical introduction as well as practical application using Python scripts from [1-4].

1. Butt, B., et. al. (2020) "Guru Workflow Scripts." Zenodo. 10.5281/zenodo.4268321

2. Butt, B., et. al. (2021) "A Systematic Metadata Harvesting Workflow for Analysing Scientific Networks." PeerJ Computer Science 7 e421. [10.7717/peerj-cs.421](https://doi.org/10.7717/peerj-cs.421)
3. Butt, B., et. al. (2021) "Ranking of articles using open-access citation-metadata." Presented at the METRICS 2021: ASIS&T SIGMET Workshop [asist.org/sig/sigmet/events/](https://www.asist.org/sig/sigmet/events/)
4. Butt, B., et. al. (2021) "Ranking of articles using open-access citation-metadata." Zenodo. [10.5281/zenodo.5555534](https://doi.org/10.5281/zenodo.5555534).

06 // PRACTICAL INFORMATION

ONLINE PLATFORMS

Owing to the current international situation, the conference is held fully online.

The main software platform for communication during the conference is Zoom. The instructions for joining the meeting may be found [here](#).

The alternative platform to be used if Zoom does not function properly for participants from Russia is Microsoft Teams. The instructions for joining the meeting may be found [here](#).

The reserve platform is Pruffme. The instructions for joining the meeting may be found [here](#).

SUPPORT

In need of assistance, contact us at:

netglow2022@gmail.com.