Mathematical Sociologist

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On the theme for the ASA Annual Meeting

By: Cecilia Ridgeway, Stanford University

ASA President and 2013 Program Committee Chair

2013 Annual Meeting Theme: Interrogating Inequality: Linking Micro and Macro
108th ASA Annual Meeting, August 10-13, Hilton New York and Sheraton New York, New York City, NY

No set of questions is more fundamental to sociology than those about inequality—what is it, why is it, how does it come about, and what can we do to change it? The theme for the 2013 meetings represents a promising new effort to address these core questions of our discipline. We will focus on to coming to grips with how inequality, in all its multi-dimensional complexity, is produced in contemporary societies. To do so, we will focus in particular on linking micro and macro processes and perspectives on inequality.

The first part of this task is to collectively interrogate the diverse range of inequality processes that characterize contemporary societies. These include the familiar processes of socioeconomic inequality but also the cross-cutting inequalities based on significant group identities, such as gender, race, ethnicity, or sexuality. They include culturally and interpersonally based forms of inequality such as social status in addition to material forms of inequality based on positions of power and resources.

We need to ask, what are the mechanisms by which each of these types of inequality is produced? Are the mechanisms that produce one type inequality similar or different than those that create other types of inequality? Are the mechanisms that initially create a form of inequality different from those that sustain it? And, most importantly, how do these different types of inequality and ways of making inequality interpenetrate and affect one another to shape the social organization of society and life chances within it? Social status, for instance, is a form of social inequality based on shared cultural beliefs but that interpenetrates material systems of inequality and plays an important role in group identity based inequalities like gender and race. Through what processes does this work? How can

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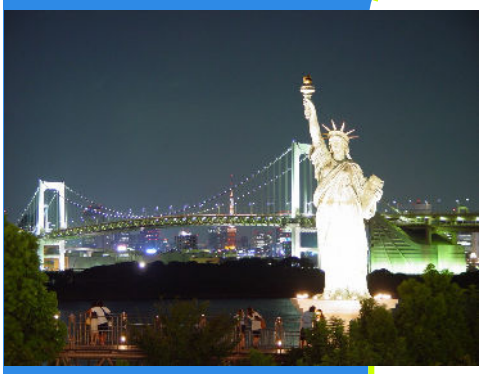
ASA Annual Meeting Theme from the President,



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we intervene in those processes? How do these processes interact to create the intersectionality that people experience in their everyday lives?

The search for mechanisms by which different types of inequality are "made" leads to my second and major goal for the program—to alert us to the need to look across micro and macro levels of analysis to find answers to essential questions about the mechanisms that create, that reproduce, or that potentially could change multiple forms of inequality. Processes at multiple levels of analysis typically work together to support or undermine durable patterns of inequality between individuals and between social groups. Institutional and organizational processes, for instance, shape, but also are shaped by key interpersonal encounters within them. These in turn jointly shape and are shaped by individual selves and choices. Our task at these meetings is to locate the key junctures among these multilevel processes that provide the levers by which different sorts of inequalities among people and groups are systematically made or unmade in the contemporary context. This is the essential first step towards changing those inequalities.

"...To find answers to essential questions about the mechanisms that create, that reproduce, or that potentially could change multiple forms of inequality..."

ASA Annual Meeting Pre-registration deadline is July 10, 2013

Mathematical Sociology Sections at ASA

- **Session 1 ~ Monday, August 12, 2013, 2:30 to 4:10 (location TBA)**

  ~ Presentations:

  "Baseline Mixture Models for Social Networks" - by Carter T. Butts (University of California-Irvine)

  "Dynamic Network Logistic-Regression: A Logistic-choice Analysis of Inter/Intra-group Blog-citation-dynamics in the 2004 US Presidential Election" - by Zack W. Almquist (University of California-Irvine) & Carter T. Butts (University of California-Irvine)

  "From Schelling to schools. Comparing a model of residential segregation with a school segregation model" - by Victor Ionut Stoica (University of Groningen) & Andreas Flache (University of Groningen)

  "Understanding the Job Lead Ties of Los Angeles Residents" by Emily J Smith (University of California-Irvine), Nicholas N Nagle (University of Tennessee-Knoxville), John R. Hipp (University of California-Irvine) & Carter T. Butts (University of California-Irvine)

  ~ Organizer, Presider, and Discussant: Noah Friedkin (University of California-Santa Barbara)

- **Session 2 ~ Monday, August 12, 2013, 4:30 to 5:30 (location TBA)**

  ~ Presentations:

  "Random deviations and the micro-macro problem" by Michael Maes (ETH Zurich) & Dirk Helbing (ETH Zurich)

  "Regional Variation in Status Values – An Explanation Based on Status Construction Theory" by André Grow (University of Groningen) & Andreas Flache (University of Groningen)

  ~ Organizer, Presider, and Discussant: Noah Friedkin (University of California-Santa Barbara)

Mark Walker

Graduate Student Spotlight!

Mark Walker, Ph.D. Candidate at The University of Iowa

"...Personal ties can shape identity formation..."

I received my B.A. in sociology and philosophy from Weber State University in 2008 and joined the graduate program in sociology at the University of Iowa that fall. I am currently working on my dissertation prospectus and expect to begin data collection this summer. My research interests include self and identity, social networks, and the measurement of personal social networks. My dissertation investigates the interplay between identity conflict, personal network structure, and psychological well-being.

My recent work with Freda Lynn (Assistant Professor, University of Iowa), which is forthcoming in *Social Psychology Quarterly* (June 2013), investigates the network processes at play in the relationship between social ties to others in role-based groups (e.g., classmates or coworkers) and role-internalization (i.e., identity salience). Theorists have traditionally assumed that the mere presence of ties to a role-based group will increase the salience of that role (e.g., the proportion of coworkers in your personal network will heighten your worker identity). I refer to this as the *social and emotional attachment* approach, which draws heavily on the work done by Stryker and colleagues (e.g., Stryker and Serpe 1982, 1994; Callero 1985), since it suggests that social and emotional attachment to the role accrues because of the strength and extensiveness of role-based ties in one's personal network.

My work, however, stresses an entirely different mechanism through which personal ties can shape identity formation. Whereas the traditional approach emphasizes how contacts directly affect an individual's sense of self, I focus instead on how an individual's contacts may or may not be tied to one another and the subsequent impact of "social fabric" on the self. The *embeddedness of role-based others* in one's personal network reflects the breadth of access that role-based others have to the rest of an individual's network. Whereas the social and emotional attachment approach suggests a bonding mechanism (that is, role-based relationships fuel the internalization of role meanings and expectations), embeddedness suggests an environmental adaptation mechanism. Specifically, I argue that the embeddedness of role-based others is expected to increase the proportion of social encounters that include role-meanings, causing individuals to adopt interactional strategies that that account for these environmental constraints. For example, the extent to which your coworkers know everyone else in your network will heighten your worker identity because your worker identity is likely relevant in a wider variety of social situations. Note that this argument is a twist on Burt's (1992) conceptualization

Graduate Student Spotlight Continued from page 4

of network constraint; an individual with more structural holes in her personal network has, in a sense, more choice with respect to identity if various segments of her network are not in contact with one another.

The forthcoming study examines these two distinct network processes across three role-identities: religious, work, and student. To do so, we use a vignette-style name generator designed to gather extensive personal social networks and map out the strength of ties between the respondent (ego) and their various social contacts (alters) as well as the ties between contacts in respondents' social worlds. We find that our embeddedness measure predicts identity salience, but the strength and proportion of ties to role-based others do not. These findings highlight the utility of social network analysis in the study of self and identity. Taking a social network approach to this issue provides additional information about individuals' social worlds (i.e., ties *between* social contacts) that is generally unavailable using standard survey methods. In particular, social network analysis is uniquely suited to further our understanding of *how* interpersonal relations affect the self-structure. Additionally, the method for eliciting personal social networks that we use in this paper may be of interest to sociologists who study social networks. *Post hoc* analyses, as well as post session interviews from pilot data, suggest that our approach efficiently generates relatively extensive personal networks (approximately 20 alters) without introducing any serious bias or respondent fatigue. I am currently designing a study to explicitly address the validity and reliability of the method using an experimental design.

Check out "The Embedded Self: A Social Networks Approach to Identity Theory" by Mark Walker and Freda Lynn, forthcoming in June 2013 issue of *Social Psychology Quarterly*.

References

Burt, Ronald S. 1992. *Structural Holes: The Social Structure of Competition*. Harvard University Press: Cambridge.

Callero, Peter L. 1985. "Role-Identity Salience." *Social Psychology Quarterly* 48(3): 203-215.

Stryker, Sheldon, and Richard T. Serpe. 1982. "Commitment, Identity Salience, and Role Behavior: Theory and Research Example." In *Personality, Roles and Social Behavior*, edited by W. Ickes and Knowles E., 199-218. New York: Springer-Verlag,.

Stryker, Sheldon, and Richard T. Serpe. 1994. "Identity Salience and Psychological Centrality: Equivalent, Overlapping, or Complementary Concepts?" *Social Psychology Quarterly* 57(1): 16-35.

Advances in mathematical sociology in Japan

Yoshimichi Sato, Tohoku University, Japan

Yoshimichi Sato contributed a review article in English to the *International Journal of Japanese Sociology*, which will be published this spring. The article reviews the advances in mathematical sociology in Japan for this decade and points out a problem. Although mathematical sociologists in Japan have published excellent articles with originality, most of the articles are written in Japanese. Thus mathematical sociologists in the world are not able to read them unless they speak Japanese. Sato's article will show them an outline of mathematical sociology in contemporary Japan. The following is the abstract of his article.

Mathematical sociology in Japan was born in the mid-1970s and has actively developed since then. Mathematical sociologists in Japan have studied various topics of mathematical sociology as well as of quantitative sociology. The Japanese Association for Mathematical Sociology (JAMS) was established in 1986. It holds semi-annual conferences and publishes *Sociological Theory and Methods*, its official journal. Thus, the JAMS is a platform for mathematical sociologists in Japan to present and publish papers, contributing to the institutionalization of mathematical sociology in Japan. It has also co-sponsored five joint conferences with the Section on Mathematical Sociology of the American Sociological Association. Based on these activities, mathematical sociology in Japan could be judged to be vibrant domestically and internationally; it has a bright future. However, I argue that mathematical sociologists in Japan have tended to confine themselves to areas where mathematical modeling is relatively easy. These areas are not necessarily attractive to sociologists in other fields. I propose that mathematical sociologists in Japan should tackle social phenomena that other sociologists think are critical to sociology so that they further contribute to advances in the discipline.

~~Section Awards~~

Congratulations to all the winners of the section awards! Thank you to the committee members and chairs for your efforts in making these difficult decisions. The next issue of the Mathematical Sociologist will future the winners in detail.

Graduate Student Paper Award

Charles Seguin (University of North Carolina at Chapel Hill, "Cultural Superstardom from Multiple Mechanisms: Two Mathematical Models of Cultural Object Popularity"

Award Committee: James Montgomery (Chair), Vincent Buskens, Noah Mark, and Damon Centola

Outstanding Dissertation in Progress Award—Decisions for the 2012 and 2013 awards:

Zack Almquist (University of California, Irvine). "Vertex Processes in Social Networks"

Akshay Patil (Stony Brook University). "Analyzing Dynamics in Online Social Networks"

Award Committee: Arnout Van de Rijt (Chair), Thomas Gautschi, Mark Fossett, Emily Erikson, and Amir Goldberg

Outstanding Article Publication Award

Lincoln Quillian, "Segregation and Poverty Concentration: The Role of Three Segregations". *American Sociological Review* 77: 354-379.

Award Committee: Matthew Brashears (Chair), Jimi Adams, Dawn Robinson, Mark Mizruchi, and James Kitts.

Harrison White Outstanding Book Award

Noah Friedkin and Eugene Johnsen, *Social Influence Network Theory: A Sociological Examination of Small Group Dynamics* (Cambridge University Press, 2011).

Award Committee: Peter Burke (Chair), Phillip Bonacich, Guillermina Jasso, John Skvoretz, and Thomas Fararo

Featured Book: *Social Influence Network Theory*

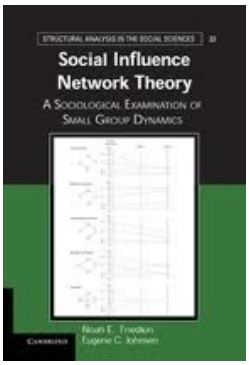
Social Influence Network Theory - A Sociological Investigation of Small Group Dynamics by Noah Friedkin and Eugene Johnson won the Harrison White Outstanding Book Award for 2013.

Social Influence Network Theory presents a mathematical formalization of the social process of attitude change as it unfolds in a social network of interpersonal influences. The theory is applied to lines of research in small group dynamics concerned with changes of group members' positions on an issue -- including the formation of a consensus and of settled disagreement - via endogenous interpersonal influences, in which group members are responding to the displayed positions of others in the group.

Social influence network theory advances a dynamic social cognition mechanism, in which individuals are weighing and combining their own and others' positions on an issue. The influence network construct of the theory is the social structure of the endogenous interpersonal influences that are involved in this mechanism. With this theory, the authors seek to lay the foundation for a better formal integration of classical and current lines of work on small groups in psychological and sociological social psychology.

Noah E. Friedkin is Professor of Sociology at the University of California, Santa Barbara. He is the author of *A Structural Theory of Social Influence* (Cambridge, 1998), which received the award for Best Book in Mathematical Sociology from the Mathematical Sociology Section of the American Sociological Association.

Eugene C. Johnsen is Professor Emeritus of Mathematics, former Vice Chair of Mathematics, and former Director of Summer Sessions at the University of California, Santa Barbara.



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"Method Bias in Comparative Research: Problems of Construct Validity as Exemplified by the Measurement of Ethnic Diversity"

ROBERT NEUMANN & PETER GRAEFF

pages 85-112

"Social Values and Social Structure"

DAVID WILLER, ERIC GLADSTONE & NICK BERIGAN

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Book Review :

Dynamical Processes on Complex Networks (4th ed.) by A. Barrat, M. Barthélemy, & A. Vespignani
Cambridge, UK: Cambridge University. 366 pp. £48 (hardcover)

THOMAS U. GRUND

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25th Annual Group Processes Conference in NYC August 9, 2013

The Twenty Fifth Anniversary Group Processes Conference is planned for the Sheraton New York on August 9 (immediately preceding ASA 2013). The conference celebrates the accomplishments of researchers in group processes over the last 25 years while looking forward to exciting new developments in the field. The special focus of the conference is on bridging between the research traditions of group processes and the growing area of research in social media and systems of computer mediated interaction.

During the morning program scholars in several major areas of research in groups processes will set the stage for the future of research in group processes. The afternoon program will focus on building new research opportunities in theories of group processes. The program includes graduate student round tables, current research presentations, and a panel discussion on group processes, the internet, and research collaboration between academia and social media industry professionals.

New York City is a fitting venue for the Group Processes 25th Anniversary Conference. Through the generous support of our sponsors we are able to partly subsidize the cost of attendance for all participants, and especially for graduate students. For their generous support we would like to thank facebook, Emerald Publishing, Ohio University, State University of New York at Albany, and Ashland University.

Register by July 1st for pre-registration cost at
http://groupprocesses2013.blogspot.com/p/registration.html

Organizers:
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Ann Shelly, Ashland University
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http://groupprocesses2013.blogspot.com/

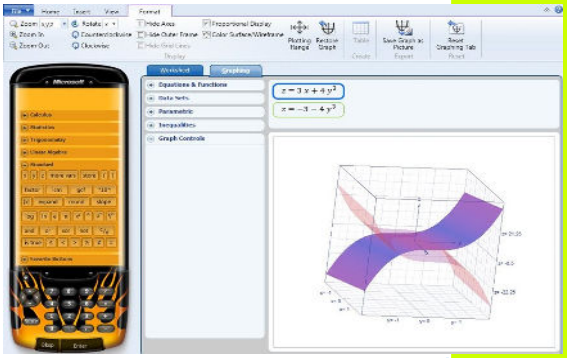
Technology...

Many (if not most of us) could not do our jobs without some form of technology. In this section of the newsletter, you will find more information about software and applications that make doing and teaching mathematical sociology easier.

Microsoft Mathematics 4.0 ~ submitted by David Heise

Microsoft has a math package that combines with the equations facility of Word. The package does symbolic algebra, calculus, matrices, complex numbers, operations on lists, and some other things. It's not perfect - e.g., it does not compute decimals, instead showing numbers as fractions, sometimes with humongous numerators and denominators. However, the package is fairly powerful, and it has one really positive feature: it is FREE (whereas Mathematica Standard costs more than a thousand dollars)!

Microsoft Mathematics 4.0 can be downloaded at http://www.microsoft.com/en-us/download/details.aspx?id=15702 and the add-in for combining the package with Word is at http://www.microsoft.com/en-us/download/details.aspx?id=17786.



Screen shot of Microsoft Mathematics

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https://www.khanacademy.org/

"You can download the app from the iTunes store. I love this app!" (~Donna Lancianese newsletter co-editor)

https://itunes.apple.com/us/app/khan-academy/id469863705?mt=8

Attention Graduate Students....

Greetings from the Khan Academy team!

Are you or do you know someone who would be great at making a short video explaining a difficult concept or writing some challenging questions to help test a concept? If so, we would love to get your help!

Sociology graduate students and others are invited to enter the MCAT video competition (sponsored by the AAMC, Khan Academy, and the Robert Wood Johnson Foundation) for the chance to become content creators for the behavioral sciences content on the revised MCAT exam. Winners will join the Khan Academy team in creating free educational videos on topics related to the psychological, social and biological foundations of behavior.

Contest submissions are now being accepted and the deadline is June 14, 2013.

To view full contest rules, submission guidelines, and criteria for entry: http://www.khanacademy.org/about/med-competition

Invitation to IPSA-NUS Summer School for Social Science Research Methods

The **2nd Annual IPSA-NUS Summer School for Social Science Research Methods** will be held **July 8-19, 2013**, at the National University of Singapore.

The Summer School has added a number of basic and advanced courses to its roster, such as Applied Data Analysis, Causal Inference, and Game Theory. Overall, the Summer School offers eleven courses in quantitative, qualitative, and formal methods – eight regular two-week courses, two one-week Survey Methods courses, and an additional two-week Discourse Analysis course that runs July 22-August 2, 2013. All courses focus on both the theory and practice of social science research and provide high-quality training in diverse, state-of-the-art methods and techniques by outstanding and highly experienced international faculty.

Join us for two weeks of rigorous training in social science research methods and truly global networking opportunities. Acquire cutting-edge quantitative and qualitative methods skills, meet future collaborators and co-authors, and make new friends with similar research interests from all over the Asia-Pacific, the U.S., Europe, and beyond.

Join us in one of the world's most fascinating cities this July. Join us in the *Lion City* of Singapore!

Please consider contributing to the newsletter! We would welcome submissions on:

- "Graduate Students on the Market" - Write a short blurb about yourself (i.e. research and teaching interests, dissertation synopsis, etc) and please include a picture.
- "Words of Wisdom"- For those seasoned sociologists, if you could go back in time, what would you tell yourself in grad school or in your early career? These pearls would be a fabulous addition to the newsletter.
- "What are you reading?" - Have you finished a good book? Even if its not an academic text, consider writing a short book review.
- As always, open submissions are welcome!

Thank you for your timely contributions to the spring/summer Issue of the *Mathematical Sociologist*. Please continue to send us your announcements, articles, book reviews, conference announcements, etc. The more you are involved with the newsletter, the better it will be.

Please feel free to send us your comments, concerns, corrections, or any ideas you have for the newsletter.

Have a great summer and watch your email for future newsletter editor requests.

Newsletter Co-Editors

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We are on the Web!
http://www.sscnet.ucla.edu/soc/groups/mathsoc/

Mission Statement of the Mathematical Sociology Section

The purpose of the Mathematical Sociology Section of the American Sociological Association is to encourage, enhance and foster research, teaching and other professional activities in mathematical sociology, for the development of sociology and the benefit of society, through organized meetings, conferences, newsletters, publications, awards and other means deemed appropriate by the Section Council. The Section seeks to promote communication, collaboration and consultation among scholars in sociology in general, mathematical sociology and allied scientific disciplines.

Archimedes Quoted in D MacHale

There are things which seem incredible to most men who have not studied mathematics.