Mathematical Sociologist

Volume 18, Issue 1 Fall/Winter 2014-2015

Comments from the Chair...Philip Bonacich

25 or 6 to 4

Some things I've learned since becoming chair of the Mathematical Sociology Section:

1) The Mathematical Sociology Section has a blog, available from our website, that is fun and informative to read. The blog also has a blogroll of other fascinating and relevant blogs. (http://www.sscnet.ucla.edu/soc/groups/mathsoc/index.php)

2) Our section is simultaneously rich and poor. We are fortunate to have members who have contributed to very large fund to support graduate student awards but we have little money for other activities, like the reception at the ASA meetings. Would you like a table or chair or even the entire reception named after you? Contact me for details.

3) Membership count is essential in determining the number of sessions we have at the ASA meetings. Ordinarily, with less than 300 members, we will be allocated just 1 regular session. If each of us was to recruit .422 additional members we would be guaranteed two sessions. Please ask colleagues who may not be members already. We also have a valuable graduate student dissertation award that student members are eligible to compete for.

4) The section depends on volunteers more than it depends on money. Come to the next Business Meeting prepared to serve on a committee or help in some vital activity, like planning the newsletter or the web page.

Inside this issue:

James S. Coleman Distinguished Career Award

Committee Chiar: John Skvoretz

Philip Bonacich, University of California—Los Angeles

Outstanding Article Publication Award

Committee Chiar: Delia Baldassarri

Gianluca Manzo, Centre National de la Recherche Scientifique

"Educational choices and social interactions: a formal model and a computational test"

Outstanding Graduate Student Paper Award

Alexander Hanna, University of Wisconsin

"Computer-Aided Content Analysis of Digitally Enabled Movements"

Outstanding Dissertation in Progress Award

Chair, Matthew Brashears

Jesse Clark, University of Georgia

A Call For Nominations.... Mathematical Sociology Awards for 2015

Graduate Student Paper Award

This award is presented for the best paper written by a graduate student that makes a significant contribution to mathematical sociology. Papers can be published or unpublished. The submission can consist of a dissertation chapter, but not the entire dissertation. The submission must have been written or published during the three years prior to the award year. The author/first author must be a graduate student at the time of submission, and all authors must be graduate students when the paper was written. Nominations and self-nominations are welcome. Please send a copy of the paper and a nomination letter by February 1, 2015 to:

James Montgomery

jmontgom@ssc.wisc.edu

Outstanding Article Publication Award

This award honors an article that has made an outstanding contribution to mathematical sociology. Eligible articles must have been published during the three years prior to the award year. Please send a copy of the article and a nomination letter by February 1, 2015 to:

Amir Goldberg

amirgo@stanford.edu

Mathematical Sociology Outstanding Dissertation in Progress Award

This award provides a grant of $1,500 to meet some of the scholarly expenses of a student whose dissertation employs mathematics in an interesting, imaginative or ingenious way to advance sociological knowledge. The applicant should submit a copy of his or her approved dissertation proposal, with a list of any requirements added by the graduate committee. The packet should also include a letter of support from the student's sponsor, which describes the student's qualifications for the completed task and the potential importance of the project. The requirements include membership in the ASA and the mathematical sociology section during the period to be covered by the grant. Please send a copy of the dissertation proposal and a nomination letter by February 1, 2015 to:

Matthew Salganik

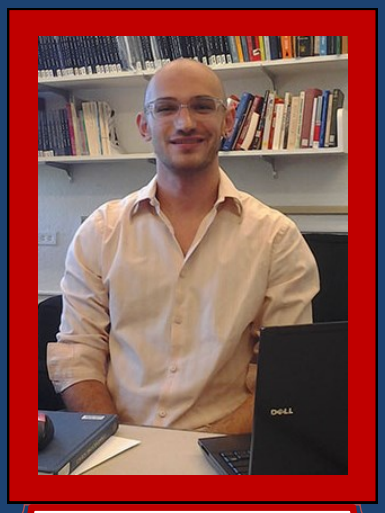
mjs3@princeton.edu

Harrison White Outstanding Book Award

This award honors the book that has made an outstanding contribution to mathematical Sociology. Eligible books must have been published in the four years prior to the award year. Nominations must come from members of the American Sociological Association. Nominations and self-nominations are welcome. Please send a copy of the book and a nomination letter by February 1, 2015 to:

Noah Friedkin

friedkin@soc.ucsb.edu



HIGHLIGHTS

GRADUATE STUDENTS IN MATHEMATICAL SOCIOLOGY

Misha Teplitskiy

University of Chicago

Misha's dissertation is composed of three studies of journal peer review in sociology . The first study asks "How do sociological manuscripts change as they undergo peer review?" Misha links a sample of quantitative papers presented at ASA annual meetings to the versions published in two peer-reviewed journals, American Sociological Review and Social Forces. The article pairs approximately represent cases of sociological research before and after peer review. Several measures demonstrate that manuscripts tend to change more substantially in their theoretical framing than in the data analyses. The finding suggests that a chief effect of peer review in quantitative sociology is to prompt authors to adjust their theoretical framing. This study is currently in the revise-and-resubmit stage at a sociology journal.

The second study asks "Do substantive divisions between scientists in a research area affect peer review?" Using review data from American Sociological Review and a simple mathematical model, Misha examines whether disagreement or consensus among reviewers of a manuscript predicts its poor or enthusiastic reception by the larger sociological audience. Preliminary results show that only those manuscripts reviewed positively by all reviewers go on to make substantial impact. Manuscripts over which reviewers disagree, the outcome many assume is common to divided research areas, go on to make vastly less impact, the outcome many assume need not be characteristic of divided research areas. In other words, the evidence does not support the view that substantive disagreements in a research area strongly affect review. This work is a joint effort with Prof. Von Bakanic, College of Charleston. The third study, currently in the design stage, uses American Sociological Review data to model the cognitive process of review, a process about which little is known. Misha takes a machine learning approach to fit various decision models to the data and assess which model fits it best.

In addition to his work on evaluation in science Misha is involved in several collaborative projects (and [nearly] always open to new collaborations!):

With James Evans, University of Chicago, Misha asks, "How firm is sociological knowledge?" To estimate the robustness of the sociological literature they reanalyze findings from thousands of articles that use the General Social Survey, 1972-2012, estimating (1) published models and alternative specifications on in-sample data, and (2) published models on future waves of the GSS. Their findings suggest that social scientists are engaged in only a moderate amount of "asterisk-hunting." A bigger concern with the published literature is its relevance for the

current social world.

With Todd Van Gunten, Juan March Foundation and John Levi Martin, University of Chicago, Misha investigates whether esteemed economists disagree on how to solve pressing public policy questions because of ideological differences.

Misha grew up in Ukraine and moved to Texas, where he attended Rice University and received a B.S. in physics and mathematics. During his undergraduate years Misha participated in research in mathematics and physics, including a summer program on plasma physics at Los Alamos National Laboratory and year-long research on quantum phase transitions at Rice. Misha found the methods and rigor of physics and mathematics challenging and elegant, but realized – a little late, perhaps! – that molecules and billiard balls as subject matter are not nearly as interesting as human beings.

Manu Muñoz-Herrera is a fourth year Ph.D. candidate of Sociology at the ICS in the University of Groningen, The Netherlands. He earned his MSc. in Economics from the University of Valencia in Spain (with honors) in 2010, and his BSc. in Economics from the Industrial University of Santander (UIS) in Colombia.

His research interests focus on how differences between people (heterogeneity) shape their relationships with others in the context of social networks. In his research he uses a combination of formal mathematical modeling and experimental laboratory research, which have proven very powerful in helping explain patterns of relationships and levels of involvement between individuals in different contexts. For his doctoral dissertation, "The impact of individual differences on network relations", he concentrates on how heterogeneity influences the establishment of lasting relationships between people (stability & commitment) which leads to the social exclusion of less attractive individuals and to inequality in the benefits people can accrue from their relationships. The question of how differences between people affect the way they relate to each other can help explain social phenomena such as exclusion and inequality, based on microlevel assumptions about the actors involved and not only based on structural constrains at the network level.

One example of Muñoz-Herrera's work derives from his interest in understanding how people solve complex coordination problems in order to relate to each other, especially in network settings, when their preferences about how to relate are not aligned but are in conflict. In many situations we want to choose similarly to others, such as buying the same technology our

Manu Muñoz-Herrera
University of Groningen

colleagues do in order to be compatible, or going to the same social events as our friends as it makes us happier than going out without them. However, when there are different choices available it is not evident which we should choose. This is particularly prominent when people prefer options which differ from those of their friends. That is,

preferences are in conflict. This project investigates how conflicts in preferences affect people's choices to relate to each other, and how the interplay between our own preferences and the pressure (influence) from those around us shapes our behavior. Muñoz-Herrera's work to this end has lead to the publication of the article "Heterogeneous Network Games: Conflicting Preferences" in Games and Economic Behavior and to the elaboration of an experimental paper on the conditions for segregation when there are different levels of conflict in the social system. He is currently preparing the manuscript of the experimental paper for submission. Both articles were coauthored with Penelope Hernandez from the Laboratory of Experimental Economics (LINEEX)

A second line of inquiry he pursued, in the research for his doctoral dissertation, aimed to understand the effect of individual-level heterogeneity on collaborative exchanges. He argues that in collaborative relationships, i.e. joint ventures, it is not only the type of resources people have (resource heterogeneity) but their capacity to use them and be productive, that strongly affects the selection of partners. Productive capacities refer to the ability people have to influence the achievement of valuable outcomes. For instance, if a researcher is interested in writing a scientific paper with a coauthor, the productive capacity of that coauthor can be seen as her expertise on the topic of the research. This project investigates how productive capacities influence what relationships are formed and to what extent people use their resources in each of their relationships. That is, the project seeks to explain under what conditions differences in the productive capacities people have (may) lead to social exclusion and reduce the opportunities some have (e.g. the least experts) to achieve valuable outcomes. As such, Muñoz-Herrera has produced a paper that mathematically models the interaction of heterogeneous actors in productive exchange networks (in preparation for submission to the Journal of Mathematical Sociology) coauthored with Jacob Dijkstra, Rafael Wittek and Andreas Flache, all from the University of Groningen. In addition, an experimental article has been written convening how people solve the complex coordination choices of partner selection and involvement of resources in multiple collaborative relationships (in preparation for submission to Social Networks) together with Jacob Dijkstra.

Muñoz-Herrera has submitted his doctoral dissertation and the defense date is planned for February, 2015. Currently he is designing the research program he wishes to pursue, after his graduation, based on the questions triggered from his studies on individual differences. Particularly, he is interested in understanding the coevolution of networks due to the choices of heterogeneous actors. In fact, while the approach of his PhD research has been inherently static (i.e. equilibrium), his aim is to inquire about emergence of commitment between actors in complex systems. This is a dynamic approach to study how lasting relationships are established. He has already started work in this line, which has led to the publication of the article "The Bargaining Power of Commitment: An Experiment on the Effects of Threats in the Hawk-Dove Game" in Rationality and Society, coauthored with Alejandro Palacio and Alexandra Cortés (UIS). In addition, he is working together with Ernesto Reuben (Columbia Business School) on an experimental project that addresses questions on how we make relationships last a long time. Specially, the paper focuses on how we solve this puzzle in the presence of multiple potential partners. Furthermore, they are interested in understanding how difficult it is for people to let go of existing partners even when they would like to and would be better off doing so. Muñoz-Herrera's aim, after graduation, is to continue tackling his research questions in an interdisciplinary manner that can provide richer and more plausible explanations to commitment and the evolution of social relationships, through the tools that game theoretic modeling and experimental laboratory research offer."

Annual Report for the mathematical Sociology Section

For membership year 2013-2014

Prepared by Jane Sell, Past Chair of the Section.

Section Governance

During the year, there were routine matters that were considered including the following committee appointments:

Committee on Nominations: Entire Council

Committee for Coleman Distinguished Career Award: Chair John Skvoretz

Committee for Best Article in Mathematical Sociology: Chair: Delia Baldassarri

Committee for Graduate Student Paper Award: Chair

Committee for Outstanding Dissertation in Progress Award: Chair, Matthew Brashears

The entire council nominated candidates for the positions that were open (President Elect, Two Council Members, a Student Council member). Noah Friedkin as Past President then took these nominations and contacted members for permission to list them on the ballot.

Business Meeting

41 people attended

AGENDA OF MATHEMATICAL SOCIOLOGY MEETING:

- *Mathematical Sociology Section of ASA*
- *Council Meeting: Monday, August 18th at 7am at Daily Grill*
- *Paper Session: Advances in Mathematical Theory: Population Structures and Dynamics, Tuesday, August 19: 8:30-10:10*
- *Paper Session: Advances in Mathematical Theory: Group Processes and Interaction, Tuesday, August 19th: 10:30-12:10*
- *Coleman Address: Tuesday, August 19th: 12:30-1:30*
- *Business Meeting: Tuesday, August 19th: 1:30-2:10 (Article Award, Graduate Student Paper Award and Dissertation Award Presented at this meeting).*

AWARDS FOR MATHEMATICAL SOCIOLOGY (2014)

- *James S. Coleman Distinguished Career Award for 2014: Phil Bonacich, UCLA*
- *Outstanding Article Publication Award: Gianluca Manzo*
- *Graduate Student Paper Award: Alexander Hanna*
- *Outstanding Dissertation in Progress Award: Jesse Clark*

Discussion:

- *Report by Secretary/Treasurer John Skvoretz*
- *Report on Newsletter (Donna Lancianese)*
- *Report regarding Website (Matt Brashears)*

  Report on Coleman Award and Journal of Mathematical Sociology (Phil Bonacich)
- *Request to set up new RC on Mathematical Sociology at ISA (Ryuhei Tsuji and Mitch Sato)*
- *Welcoming of Phil Bonacich as Incoming Chair*

Section Council Meeting

- *Our practice is to hold the Council meeting outside of the usual time allocations, so that we can save our time for presentations. In August, we had a breakfast meeting (held at the local dinner, the Daily Grill).*

- *We discussed issues related to our newsletter. Our newsletter editors have volunteered to stay on for another year. Pamela Emanuelson and Donna Lancianese are doing a fine job and the division of labor between them seems to work well.*

- *We discussed the idea of developing the Coleman Address as a regular event for our section. Phil Bonacich has spoken with the editors of Journal of Mathematical Sociology and they have agreed to publish the Coleman Address.*

- *The Website is doing well; people do consult it. We have started a data repository, but there have not been very many additions and we discussed the idea of publicizing this further.*

- *We had a request to discuss the possibility of adding a Mathematical Sociology section with the ISA. The council discussed this and had very different views about it.*

- *We also discussed our reception and the growing costs of receptions even when we team up with other sections. We left this issue unresolved, but no doubt will have to revisit it.*

- *We prepared the agenda for the business meeting.*

State of the Section Budget

Our largest expense is always the reception. We share the reception with other small sections (this year and last year): Rationality and Society and Evolution, Biology & Society. However, this year we paid more than our share to help out these other sections. This year, award plaques were donated and the council breakfast was not paid from section money. We have a very healthy endowment for our graduate student awards.

Math. Soc. Dissertation Award (Fund=73, Section=37)	
ENDING FUND BALANCE 12.31.11	$135,205.55
ENDING FUND BALANCE 12.31.12	$150,941.43
Interest Income	$20,581.91
Awards	-$3,000.00
ENDING FUND BALANCE 12.31.13	$168,523.34
Interest Income 1.1.14-5.31.14	$6,941.24
ENDING FUND BALANCE 5.31.14	$175,464,58
Math. Soc. Section Account (Section=37)	
ENDING FUND BALANCE 12.31.11	$2,141.00
ENDING FUND BALANCE 12.31.12	$1,702.00
Section Allocation	$1,040.00
Other Income	$1,676.00
AM Reception	-$1,760.00
Award Expenses	-$918.00
AM Other Expenses	-$147.00
ENDING FUND BALANCE 12.31.13	$1,593.00
Section Allocation	$1,012.00
ENDING FUND BALANCE 5.31.13	$2,605.00

Activity in the Dissertation Award Fund included the accumulation of interest and two award payments. Activity in the Section Account included income from section allocations plus other income ($1,431 excess revenue from joint conference with JMS deposited by E. Johnson) and expenditures for annual meeting reception and awards (a total of $2,825).

Statements, Notes, Observations

As noted above, our largest expense is always our reception. The amount of food is really not an important issue, but the space provided is an important way for section members to see each other in an informal setting. We will need to be more creative in the future about the receptions since the price keeps rising.

The Previous Year

Overview

- *Please provide an overview of your section's programming for the last year. We also invite you to include information on the state of the section, sentiments of the members, important issues in the field.*
- *(Most of these are discussed above):*
- *We discussed the idea of developing the Coleman Address as a regular event for our section. Phil Bonacich has spoken with the editors of Journal of Mathematical Sociology and they have agreed to publish the Coleman Address.*
- *The Website is doing well; people do consult it. We have started a data repository, but there have not been very many additions and we discussed the idea of publicizing this further.*
- *We had a request to discuss the possibility of adding a Mathematical Sociology section with the ISA. The council discussed this and had very different views about it. We sent out information about this effort through our listserv. There was not much enthusiasm for this (for a variety or reasons) and so our colleague, Ryuhei Tsuji decided to put aside the effort in the next year.*
- *Our endowment for the graduate student dissertation awards has grown (impressively) in the last few years.*
- *We also discussed our reception and the growing costs of receptions even when we team up with other sections. We left this issue unresolved, but no doubt will have to revisit it.*

Recruiting and Retention Efforts

We have tried to publicize the section—we have a stable membership number and are working on trying to get new student members especially.

Communications Strategy

We of course, used the listserv to post news to members. We have an active website where we post our newsletters. We discussed moving this website and this matter should be resolved this year.

http://www.sscnet.ucla.edu/soc/groups/mathsoc/index.php

The Coming Year

Elections and Nominations

As mentioned above, the Past President is in charge of the Nominations committee. It has been our practice to ask the entire council to participate in nominations for the elections.

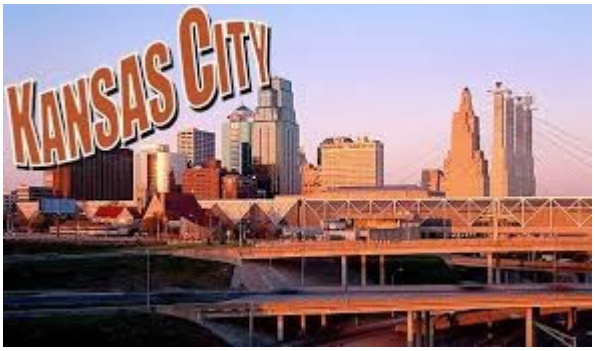
Plans for the coming year.

Phillip Bonacich has developed a program that will feature both the Coleman Address and the Harrison White Book Award Winner. The business meeting time will be shared with these two addresses. The one other session will be an open topic session. As is our usual practice, the council meeting will be held either early in the morning or right before the receptions.

CONFERENCES

REGIONAL CONFERENCES

The 2015 Midwest Sociological Society Annual Meeting (themss.org) includes two sessions potentially of interest to Mathematical Sociologists. David Sallach is organizing "Mathematical Sociology and Social Theory." The session will focus on theoretical integration through mathematics. "Social Theory and Historical Explanation," organized by Pamela Emanuelson, is seeking submissions that use formal modeling and theory in historical explanation. Abstracts of 150 words or less need to be submitted by November 5. The meeting will be held March 26-29 in Kansas City.



MATHEMATICAL SOCIOLOGY AT THE ASA

The 2015 Annual Meeting of the American Sociological Association in Chicago, will take place between April 22-25. The Call for Papers will launch on October 30. The Mathematical Sociology Section activities are scheduled for Saturday, August 22. Currently, the section has one open session planned and the business meeting will include contributions from the Winner of the Coleman Award and the Winner or the Harrison White Book Award. More information should be available in the Spring edition of the newsletter.

Mathematical Sociology:

Resources for Introducing Students to the Field

Sources for Students on Mathematical Sociology

- Phillip Bonacich and Phillip Lu. 2012. *Introduction to Mathematical Sociology*
    - *http://enfoarchitect.com/mathematicalsociology/* includes interactive demonstrations that can be used in conjunction with the text.
- John Skvoretz and Thomas Fararo. 2011. "Mathematical Sociology" *Sociopedia.isa*
- Thomas Fararo. 2007. "Mathematical Sociology." *Blackwell Encyclopedia of Sociology*

Data Bank

The ASA Section for Mathematical Sociology maintains a data depository in collaboration with the Journal of Mathematical Sociology. Please consider donating data as a service to the discipline. Donations are strictly voluntary and files are provided to users as is. If you are interested in donating, please contact Matthew Brashears at meb299@cornell.edu.

The data bank can be found at http://www.sscnet.ucla.edu/soc/groups/mathsoc/databank.html.

Thank you for your timely contributions to the Fall/Winter 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 winter and watch your email for future newsletter editor requests.

Newsletter Co-Editors

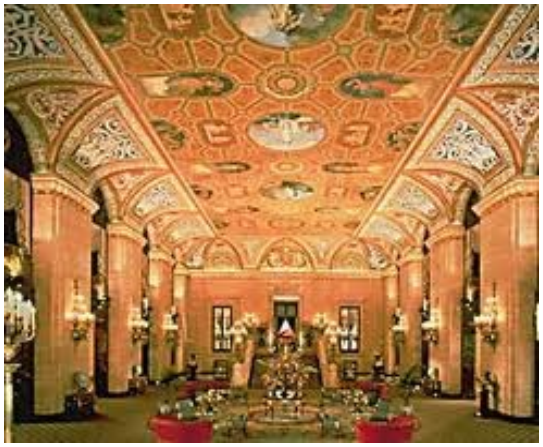
E-mail: Pamela.emanuelson@ndsu.edu (left)

E-mail: donna-lancianese@uiowa.edu (right)

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.



Palmer House,

Chicago Hilton

Site for the 2015

Annual Meeting of the American Sociological Association,

Archimedes Quoted in D MacHale

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