

The Mathematical Sociologist

Newsletter of the Mathematical Sociology

* Section of The American Sociological Association *

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Vol. 4, No 1 Fall/Winter, 1999

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From the Newsletter editor

Barbara Meeker

The Mathematical Sociologist is going electronic! At the 1999 Section business meeting, it was decided that we should try sending the newsletter to Section members via e-mail, a service that ASA is going to make available to Sections. This will save on postage, allowing us to spend more Section funds on other activities and will also get the newsletter to you more promptly. So, please make sure ASA has your correct and current e-mail address.

This issue contains a report from last year's section chair, Tom Fararo about the business and council meetings (excerpted from a longer report he wrote for ASA summarizing all the year's activities). Among the items he mentions is the invited panel on "Formal Models and Research Programs: Reflections from Experience," which was sponsored jointly by the Mathematical Sociology and Theory sections. This was an impressive panel, providing much food for thought about what mathematical sociology is, how it is related to theory, and how it is done successfully over the long term. If any readers of this newsletter have more comments or thoughts prompted by this panel and the discussion that followed it, please send them to me for future issues of the newsletter.

The current issue also contains various items about future activities with deadlines, which *are coming soon!*



ASA 1999, Chicago

Past and Present Section chairs



Thomas Fararo, Section chair 1998-99 and Kathleen Carley, Section chair 1999-2000, at the 1999 Business meeting.

Section Sessions, 1999



Invited session on "Formal Models and Research Programs: Reflections from Experience" (top, l to r, John Skvoretz, discussant, Guillermina Jasso, president; bottom, l to r, Harrison White, Peter Abell, David Heiss, Joe Berger, panelists)

Outstanding Publication in Mathematical Sociology Award



Award winner Noah Friedkin receiving the award from committee member Kathleen Carley. The award went to **Noah E. Friedkin** of University of California at Santa

Barbara for his book, *A Structural Theory of Social Influence* published by Cambridge University Press in 1998.

Graduate Student Paper Award 1999



Award winner Carter T. Butts receiving the award from committee chair Eugene Johnson.

Remarks of the Graduate Student Award Committee Chair

Eugene Johnson

First I want to personally thank the other members of the Award Committee for their efforts and cooperation in discharging our assignment from the Section:

Edward Brent - University of Missouri, Columbia
Robert Hanneman - University of California, Riverside
Thomas Schott - University of Pittsburgh
Joseph Whitmeyer - University of North Carolina, Charlotte

We arrived at a virtually unanimous decision from the beginning of deliberations, making the work of the Committee extremely pleasant and enjoyable.

The Mathematical Sociology Section's Outstanding Graduate Student Paper Award for 1999 is presented to Carter Butts of Carnegie Mellon University for his paper "A Bayesian Model of Panic in Belief". The author completed this paper during his first year and a half as a graduate student and it was published in the journal *Computational & Mathematical Organization Theory* in 1998.

The paper was a joy to read and ponder. It combines a number of different aspects of the research enterprise that many of us try to incorporate in our own work - a precise mathematical model leading to testable predictions, computational simulations when the mathematical going gets rough, and a thorough analysis, some of it close analysis, of the model and its implications.

Since I want to encourage everyone to read the paper (CMOT, Vol.4 (1998), pp.373-404) I will not go into any detailed description here except to say that it gives a very interesting and plausible rendering of the emergence of panics as a process of "consensual validation of reality", based on the simple principle of Bayes Rule. It is an excellent example of work which

addresses the important micro-to-macro link in Coleman's trapezoidal schema which lays out the linkages between micro and macro social phenomena. Congratulations Carter!

Report on the Mathematical Sociology Council and Business Meetings, 1999.

Thomas J. Fararo, chair 1998-1999

Attendance at Business Meeting

A count of the attendance at the Business Meeting indicated 27 members attending. Events and discussions at this lively meeting are described under the various headings below.

Awards

Introduction. Our most important new development concerned awards. For many years, formal theorists and mathematical model-builders have lacked a mechanism for formally recognizing outstanding

Ceremony. To honor the individual winners and exhibit collective recognition for their accomplishments, a portion of the section's business meeting was reserved for a ceremony. Certificates were prepared for both awards and presented to them by a representative of each committee who made a short statement that characterized the publication and its outstanding aspects.

Further Policy Discussion and Revision. At the section's Council meeting, one item for discussion was whether the section should institute a Distinguished Career Award. In the original policy statement for the first year of the awards process, this issue had been postponed. The Council deliberated on various alternatives, mindful of the ASA constraint of at most three awards with one reserved for the graduate student level. The recommendation of the Council was that three awards be established, and this was ratified at the Business Meeting, although we again agreed to review the revised policy from year to year. The revised policy is that the three awards, each made through the mechanism of a committee of section members, are:

1. Outstanding Graduate Student Paper Award
2. Outstanding Article Award
3. On an alternating year basis, Outstanding Book Award / Distinguished Career Award

Newsletter

Plans for 2000. At the Council meeting of 1999, the decision was made to renew the editorship of Barbara Meeker for one year, with the understanding that a new editor would be appointed at the next Council meeting in 2000. It also was agreed to recommend at the section's Business Meeting that the newsletter move to electronic form in the calendar year 2000. This proposal was discussed and adopted at the Business Meeting. The plan is to have a paper version of the newsletter in the Fall of 1999, with the first electronic issue in the Spring of 2000. Details will be worked out by the new chair,

achievements in these areas. This year, with the section's having been in existence long enough to qualify for this activity, we set up and implemented a process to make as many as three awards.

The *Outstanding Publication in Mathematical Sociology Award* went to **Noah E. Friedkin** of University of California at Santa Barbara for his book, *A Structural Theory of Social Influence* published by Cambridge University Press in 1998. The committee decided not to make an article award this year.

The *Outstanding Graduate Student Paper in Mathematical Sociology Award* went to **Carter T. Butts**, a graduate student at Carnegie-Mellon University, for his paper, "A Bayesian Model of Panic in Belief," published in *Computational and Mathematical Organization Theory* in 1998.

Kathleen Carley, in communication with Barbara Meeker and with the Council. (Additional remarks pertaining to the plans for the 2000 sessions are provided below.)

Journal of Mathematical Sociology and Related Matters

Although not the official journal of the section, this long-standing flagship journal for the field of mathematical sociology has run into some difficulties with lowered subscriptions in recent years. While members can only try to persuade their university libraries to retain the journal, and the publisher continues its high subscription rate, the publisher has made an effort to stimulate individual subscriptions by having a special rate for members of the ASA. Discussion of these matters was included in the council and business meetings.

It was agreed that editor Pat Doreian would make further efforts to persuade the publisher to upgrade its web page so that member subscriptions at the reduced rate could be easily made through a secure web server.

It was noted that Doreian plans to re-organize the editorial board of JMS so as to have Special Editors for various areas of interest to members, such as Rational Choice, Social Networks, Computational Sociology (Simulation), and the like.

Earlier in the year, Tom Fararo, in consultation with Phil Bonacich and Pat Doreian, engaged in negotiations with JAI Press about the possibility of an annual volume "Advances in Formal Models," and also, a more delicate matter, shifting JMS to them from the current publisher. The latter would require a new name and we were concerned and hesitant about that. While these negotiations and deliberations were in progress, the JAI Press personnel were informed of an imminent sale of their company to Elsevier -- leading to a postponement that eventuated in a loss of JAI-Elsevier interest in these projects after the Elsevier takeover.

International Conference

Under the leadership of Phil Bonacich, past chair of the section, plans are being made for an international conference on mathematical sociology. The idea grew out of conversations between our section leadership and the leadership of a similar group in Japan. Thus, the conference is co-sponsored by our section and this Japanese group. It is scheduled to take place in June, 2000 in Hawaii. Various individuals have agreed to organize sessions in such areas as social networks, rational choice, computational sociology, metatheory and the like.

Web Page

This year our web page has been updated and the responsibility for keeping it up-to-date and posting materials has been undertaken by Phil Bonacich.

Preprint Service

While chair of the section in 1997-1998, Phil Bonacich began seeking funds to set-up a preprint service for working papers in mathematical sociology and related areas. The Council of the section, responding to Bonacich's application for a small start-up grant from the section, this year made such a grant to him. At the section's Business Meeting, a progress report on this project was given and we expect the service to be in place some time in the coming year.

Annual Meeting Sessions of 1999

Because its membership exceeded 200 by the end of September of 1998, the section was granted two sessions at the annual meetings in August of 1999. The first of these was a very important event in the history of the section and a circumstance connected with it leads to **an important proposal to the ASA** for a certain change in its current meetings arrangements. This was an Invited Session Joint with Theory Section, organized by the chair, Tom Fararo. It was an invited session intended to constitute an "outreach" of the field of mathematical sociology to a broad audience of sociologists, but especially theorists. The general idea was to have informal and highly accessible (non-technical) presentations based on personal experience, as to the way in which mathematical models have functioned in long-term research programs. The session title was "Formal Models and Research Programs: Reflections from Experience." To fulfill the outreach aspect, we made the session joint with the Theory Section.

The invited panel consisted of Peter Abell, Joseph Berger, David Heise, and Harrison White, each an eminent contributor to the field over as many as four decades. The session was moderated by Willie Jasso, with discussion by John Skvoretz. There was general agreement that the panelists and the discussant made outstanding presentations and after the presentations a very lively half-hour of open discussion took place. Subsequently, both panel members and the organizer heard from numerous members of the audience that this was one of the most interesting, indeed exciting, sessions of they had ever attended.

The second of the two Mathematical Sociology sessions was an open-submission one that was organized by Aage Sorenson of Harvard University. It dealt with the theme of social mechanisms. Presenters included Peter Hedstrom, James Montgomery, Ivar Vermeuten and Jeroen Bruggeman, and Joseph Whitmeyer. The first three are located at European universities, so that the session had a nice international representation. The discussant was Christofer Edling of Stockholm University, Sweden.

A Proposal About the Mathematical Sociology Section Day. The attendance at the invited session was very good, considering the unfortunate circumstance that the ASA meetings staff scheduled the session against a very appealing session of the Theory Section. Discussion of this situation was intense in hallways and at the Business Meeting of the Section, with members unanimous in calling for avoidance of such conflicts in the future, by a change the group-location of the section day so that it does not coincide with that of the Theory Section. That is, our proposal is:

***The Proposal:* In the grouping of sections into common section days, relocate Mathematical Sociology so that its section day is not the same as that of Theory.**

Justification. It cannot be emphasized too strongly that members of the Mathematical Sociology section regard their work as vital for the advance of sociological theory. Non-technical theorists cannot have the opportunity to learn about recent important work in mathematical model-building -- including such outreach session as the invited one of this year -- unless the relevant sessions are not in conflict with Theory sessions. Similarly, mathematical sociologists cannot profit from attending Theory sessions to learn of new conceptual issues and theoretical ideas unless such conflicts are precluded by having Theory and Mathematical Sociology section days differ.

However, and this is very important, a substantial number of the members of the Mathematical Sociology Section are either members of or interested in Rational Choice. Thus, in the proposed re-location of Mathematical Sociology's section day so that it is not the same as that of the Theory Section, **the new day should NOT be the same as that of the Rational Choice Section.**

Finances and Budget

The section was fortunate to once again have a special gift contribution from **Geoffrey Tootell**, in the amount of \$1000. Part of this is used to allow graduate students to sign-up as members of the section at no cost. Other outlays included funds for the joint reception with the Theory Section, funds for start-up of a preprint service (see above), funds for travel to the ASA meeting for the graduate student award-winner, and, of course, funds for the section's three newsletter issues.

The budget for the year 2000 was reviewed at the Council meeting and approved. The section has been

allocated \$1412. The following are the approved expenditures:

\$500 -- reception (joint with Theory Section)

\$200 -- travel for winner of graduate student paper award

\$500 -- for preprint service start-up

This leaves us with \$212, some of which may be needed for the second item above. (This budget presupposes that we will have made the transition to electronic form of the section newsletter by early 2000.)

Membership

After reaching over 200 in September of 1998, non-renewals were not offset sufficiently by new memberships to maintain that figure, as reported to us in June. As of mid-July, the section membership was 169.

Therefore, a strong renewal effort, coordinated with the ASA, was undertaken by the section chair, especially in regard to graduate students who had let their membership lapse.

The outcome of all this activity was to bring the membership back over 200 by early September, thereby assuring the section will have two sessions at the next ASA meetings in August of 2000.

Plans for 1999-2000

As formulated by the next section chair (Kathleen Carley) the plan for the August, 2000 meetings is to have a Mathematical Sociology Council breakfast meeting, then roundtables followed by the Business

Meeting. The two sessions will consist of an invited session on the theme of network evolution and adaptation together with an open submissions session on formal theorizing.

An amendment to modify the voting rules to change "majority" to "plurality" in three-way cases was adopted at the Business Meeting in 1998 but, through an oversight, was not placed on the ballot. Hence, it will be on the ballot in the election that takes place in the Spring of 2000.

Hence, in sum, the plans for the coming year include:

- (1) The section will shift from paper to electronic form of the newsletter.
- (2) The section will hold a joint Japanese-American Conference on Mathematical Sociology in Hawaii, in June of 2000.
- (3) A by-laws revision will be on the ballot in the Spring elections.
- (4) The section will initiate a Distinguished Career Award through the formation of one of three award committees.
- (5) A preprint server will be started along with an upgrade of the section's web page.
- (6) The August 2000 meetings will feature section roundtables for the first time as well as two sessions, one invited and the other one an open submission session.

Future Section Activities

Call for Nominations for Awards

Outstanding Publications Award

To recognize outstanding contributions to mathematical sociology, each year an award is given for either an article or for a book. Articles eligible for a 2000 award must have been published in calendar years 1997-2000; books eligible for a 2000 award must have been published in calendar years 1995-2000.

The deadline for preliminary nominations is **February 1, 2000**. Formal nominations, copies of the nominated article or book, and additional supporting materials must subsequently be sent to all committee members, reaching them by **March 1, 2000**. Please send or e-mail preliminary nominations to the Committee Chair:

Professor Noah Friedkin

Department of Sociology

University of California-Santa Barbara

Santa Barbara, CA 93106

Office: (805) 893-2840, (805)893-3324 (fax)

friedkin@sscf.ucsb.edu

Graduate Student Paper Award

The Graduate Student Paper Award is for the best paper in mathematical sociology written or published during the previous three calendar years. All authors of a nominated paper must have been graduate students at the time the paper was written. An award for a multiply-authored paper will be shared equally by the

authors. For each author the following information must be supplied by the nominator: name, address, telephone number, e-mail address (if available), institutional and departmental affiliation while a graduate student, title of graduate degree and date at which award of the degree occurred or is expected. Papers may be published or unpublished. A thesis or dissertation chapter or a paper based on a thesis or dissertation, but not the entire thesis or dissertation, is eligible provided its content and references are self-contained. Awardees need not be members of the ASA, nor of the Mathematical Sociology Section, and may be graduate students in any department of any university in the world. Self nominations by authors are permitted and encouraged. A nomination consists of a cover letter, in which the nominator gives a detailed justification for granting the award for the nominated paper, plus five copies of the paper and an associated abstract of up to 250 words, including the author information specified above.

The deadline is **April 15, 2000**. Please send or email nominations to the Committee Chair:

Professor Michael W. Macy

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323 Uris Hall, Ithaca, NY 14853

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<http://www.people.cornell.edu/pages/mwm14>

Career/Publications Award

To recognize outstanding contributions to mathematical sociology, each year the section gives an award for outstanding career or significant publication. This is to recognize the cumulative achievements and significant impact of a major scholar in mathematical sociology. The deadline for preliminary nominations is **February 1, 2000**. Formal nominations, a copy of the publication if relevant, and additional supporting materials must subsequently be sent to all committee

Conference Announcement

Mathematical Sociology in Japan and America, **June 23-25, 2000, Honolulu, Hawaii**. Sponsored by The Mathematical Sociology Section of the American Sociological Association and the Japanese Association for Mathematical Sociology. Sessions on Social Networks, Rationality and Society, Group Processes, Meta-Theory, and Computational Sociology. Submissions by students are welcome. Paper submission deadline is December 31, 1999. The web site, which describes the submission and registration process, is <http://www.sscnet.ucla.edu/soc/groups/mathsoc/hawaii/default.htm>

Email questions to Phillip Bonacich, bonacich@soc.ucla.edu, or Yoshimichi Sato, ysato@sal.tohoku.ac.jp School of Industrial & Labor Relations, 309 Ives Hall, Cornell University

Note from New Web Page Editor

Samsa Samila

I have agreed to work with Professor Bonacich on the Mathematical Sociology Section's webpages. I have redone them and would like to solicit information from our members.

Specifically, I would like to ask the members

- to check out the new webpages
- to email me with their name, affiliation, and email if they want to be listed on the email directory
- to submit information on interesting journals, books, and websites
- to submit information on teaching resources, e.g. resources on the web, reading lists for comprehensive exams, etc.
- to submit information on research centers and graduate programs related to math sociology
- to submit an answer to the question "what is mathematical sociology?"

members, reaching them by **March 1, 2000**. Please send or e-mail preliminary nominations to the Committee Chair:

Professor Kathleen M. Carley
Department of Social and Decision Sciences
Carnegie Mellon University
Pittsburgh, PA 15213

Office: (412) 268-3225 (tel); (412) 268-6938 (fax);
email: kcarley@ece.cmu.edu

I think the website has potential to become an important source of information and contacts for mathematical sociologist, but for that to happen we need more information to be available on the website.

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Call for Papers, ASA 2000

The **Mathematical Sociology Section** will sponsor two open submission sessions:

- (1) Social Theory: Mathematical and Computational Theorizing. This is organized by Kathleen Carley. Send papers to: Kathleen M. Carley, Department of Social & Decision sciences, Carnegie Mellon University, Pittsburgh, PA 15213; (412) 268-3225; kcarley@ece.cmu.edu
- (2) Roundtables: Mathematical Sociology, Computational Sociology, and Social and Organizational Networks. Send submissions to: Carter Butts, Department of Social & Decision Sciences, Carnegie Mellon University, Pittsburgh, PA 15213; (412) 268-3009; ctb+@andrew.cmu.edu

There will also be a **regular ASA session** on 'Mathematical Sociology', organized by Barbara Meeker. This is an open submission session. Send papers to: Barbara Meeker, Department of Sociology, University of Maryland, College Park, MD 20742-1315. (301) 405-6432; bmeeker@soey.umd.edu

Deadline for ASA submissions is **January 10, 1999**. Find instructions for submitting papers on the ASA Website, at <http://www.asanet.org/convention/call.html>

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:

It is **very important** to our section that we maintain and increase membership. Please renew your own membership and encourage your colleagues and students to join.

Application for Membership in the ASA Mathematical Sociology Section

Name:

Address:

_____ I am an ASA member and want to join the Mathematical Sociology Section. Enclosed is a check for \$10.00 for section dues (\$5.00 for students; however, while funds last, a generous gift from a section member makes membership free for graduate students). Make checks payable to the American Sociological Association.

_____ I am not an ASA member but am interested in joining the Mathematical Sociology Section.

Please send me information about joining ASA.

Send to:
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1307 New York Avenue, NW
Suite 700
Washington, DC 20005