

CONNECTIONS

October 1994 Volume 17 Issue 2

CONTENTS

NEWS

Calendar	1
Announcements	2
International Social Network Conference	6
Network News / <i>Stephen P. Borgatti</i>	12
Ties and Bonds / <i>Barry Wellman</i>	13

ARTICLES

I Was a Teenage Network Analyst: The Route From the Bronx to the Information Highway	28
<i>Barry Wellman</i>	
Displaying Hierarchical Clusters	46
<i>Linton C. Freeman</i>	
KRACKPLOT 3.0: An Improved Network Drawing Program	53
<i>David Krackhardt, Jim Blythe and Cathleen McGrath</i>	
A Procedure for Assessing Large Scale "Total" Networks Using Information From Key Informants	56
<i>Rene' Torenvlied</i>	
Social Networks of Decision-Making in a Farming System: An Exploratory Study in a Rural Area .	61
<i>Bhola Nath Ghosh</i>	

DEPARTMENTS

<u>Techniques</u> : Using MDS to Infer Relative Status From Dominance Matrices	75
<i>Stephen P. Borgatti</i>	
<u>Teachers Corner</u> : How to Explain Hierarchical Clustering	78
<i>Stephen P. Borgatti</i>	

ABSTRACTS

Articles	81
Books	115
Dissertations and Book Chapters	128

MISCELLANEOUS

How to use SOcNET	131
How to use INSNALIB	132
Post It!	135
Terminal Node	136

About CONNECTIONS

CONNECTIONS is an official publication of INSNA, the International Network for Social Network Analysis. Its primary purpose is to support INSNA members by providing news, information and tools for teaching and researching social networks. In addition, *CONNECTIONS* provides an outlet for short scholarly papers which are either too narrow in scope for other journals, or which need to be published quickly.

CONNECTIONS is supported by the INSNA electronic library (INSNALIB), which is accessible by anonymous FTP. The library enables authors of articles in *CONNECTIONS* to make data and software described in their articles immediately available to readers. In this sense, *CONNECTIONS* becomes, in part, an electronic journal. Instructions for using the library are given in the last pages of this and all future issues. INSNALIB will also be used to exchange material not related to *CONNECTIONS*. For example, the UCINET 3.0 programs by MacEvoy and Freeman are available, free of charge, on INSNALIB. If you have software or data that you would like to share with other networkers, please allow INSNA to put it up on INSNALIB. And if you want to publish a description of your (noncommercial) software in *CONNECTIONS*, please expect to donate the software to the library.

Prospective authors should **provide electronic versions (i.e. wordprocessing files) of their papers, in addition to paper versions**. This includes figures and tables whenever possible. There are several reasons for this. First, it will streamline production, which will reduce costs and might even make it possible to publish three issues a year instead of two. Second, it will allow us to make issues of *CONNECTIONS* available on the Electronic Library. Third, it will allow us to reprint back issues as needed. Currently, we print more copies than we think we need in

Calendar

	1994	1995	1996
JANUARY		Workshop on Rational Choice Theory and Networks 1/26 - 1/28, The Hague	
FEBRUARY			International Social Networks Conference 2/22 - 2/25, Charleston, SC
MARCH			
APRIL			
MAY			
JUNE		Canadian Sociology & Anthropology Association Montreal	
JULY		International Social Networks Conference 7/6 - 7/10, London	
AUGUST		American Sociological 8/19-8/23, Wash. D.C.	American Sociological 8/10-8/14, Chicago
SEPTEMBER			
OCTOBER			
NOVEMBER	American Anthropological Association 11/30 - 12/4, Atlanta		
DECEMBER	2nd Int'l Conference on Social Science Information Technology 12/7 - 12/9, Amsterdam ----- 5th Symposium of the Research Committee on Empirical Family Research 12/8 - 12/9, Amsterdam		

Announcements

MEETINGS

American Anthropological Association November 30 - December 4, 1994 Atlanta, Georgia

The theme of the '94 meetings is human rights. Sessions address the following topics (among others):

- Where in Human Nature Do Human Rights Come From? Biological, Cultural and Legal Perspectives
- Women and Human Rights
- Ethnic Conflict in Europe
- Missionaries and Human Rights
- Race and Other Misadventures Honoring Ashley Montagu
- Human Rights and the Environment
- The Human Right to Food
- Poverty and Welfare Reform
- Exhuming Human Rights Exhumations and Democracy in Guatemala and Beyond
- Human Rights and Peace The Role of Anthropology and Anthropologists

There will be a plenary session featuring Corretta Scott King, speaking on human rights around the world, and a public policy forum on "Rethinking Race and Ethnic Categories in Federal Statistics," from the perspectives of government officials and biological and cultural anthropologists. (The Federal Office of Management and Budget is currently reviewing categories and definitions used by all federal agencies to collect race and ethnicity statistics.) In addition, there will be a professional presentation of *My Heart Is Still Shaking*, a play based on Marjorie Shostak's ethnographic classic, *Nisa: The Life and Words of a !Kung Woman* (the cost of this production is included in the price of registration).

This will be the first time the Association's annual meeting has been held in Atlanta, which features opportunities to visit the Martin Luther King

Memorial, the Jimmy Carter Library and Museum, the Yerkes Primate Center, the CNN Headquarters, the World of Coca-Cola Museum, and Zoo Atlanta's newest gorilla.

For more information contact:

American Anthropological Association
4350 North Fairfax Drive, Suite 640
Arlington, VA 22203-1621
(703) 528-1902 ext 3025

Second International Conference on Social Science Information Technology December 7 - 9, 1994 RAI International Congress Centre, Amsterdam, THE NETHERLANDS

Workshops: Wednesday 7 December 1994.
Conference Sessions: Thursday and Friday 8-9
December 1994.

Aims. The number of computer applications for the social and behavioral sciences continues to increase at a rapid pace. To survey this abundance, and acquaint researchers and educators with current high-quality software, iec ProGAMMA has organized the Second International SSIT Conference. Social Sciences and IT; disparate or synergetic entities, SSIT 94 will also take a closer look at the relationship between academic practice and software development.

Program. Preceding the actual conference, the *SSIT Seminar* features several parallel workshops that introduce prospective users to new computer applications for the social and behavioral sciences. The *SSIT Conference* itself revolves around a number of symposia chaired by leading experts in their field. These thematic sessions cover recent trends and developments in IT-related research and education, and give a balanced overview of the corresponding computer applications. Papers, posters, and a conference exhibit, covering the interconnected aspects of IT and the social and behavioral sciences, will give participants the

opportunity to present and discuss their findings. Finally, SSIT 94 will also host the awards presentation of the *SSIT 94 Software Awards*.

SSIT 94 Seminar: *Structural Equation Modeling* (A. Boomsma, K.G. Joereskog); *Scaling* (E.E.C.I. Roskam, W.H. van Schuur); *Experimentation and Observation* (W. Schneider, M.J. van der Vlugt); *Content and Text Analysis* (R. Popping, C.W. Roberts).

SSIT 94 Symposia: *Network Analysis* (S. Borgatti, USA); *Statistical Computer Applications* (J.A.P. Hagenars, NL); *Innovative Educational Systems* (N. Hammond, UK); *Visualization*. (A.J.N. Judge, B); *Brain Research and Task Performance*. (W. Schneider, USA); *Psychological Assessment* (W.J. van der Linden, NL); *Content and Text Analysis* (P.P.H. Mohler, D); *Simulation* (A. Nowak, PL); *Computer-Assisted Interviewing* (D. Sikkel, NL); *Neural and Self-Organizing Networks* (P.H. de Vries, NL).

Registration Fees:

Seminar (Workshop program):	US\$ 130.--
Conference (Sessions):	US\$ 235.--
Seminar AND Conference:	US\$ 315.--

For more information, contact:

iec ProGAMMA
 SSIT 94 Organizing Committee
 P.O. Box 841
 9700 AV Groningen
 The Netherlands
 Tel.: +31 50 636 900
 Fax: +31 50 636 687
 Email: gamma.post@gamma.rug.nl

5th Symposium of the Research Committee on Empirical Family Research: Advances in Family Research.

8 - 9 December 1994. Amsterdam

For information contact:

Dr. J.J. Hox
 University of Amsterdam
 Faculty of Educational Sciences
 Ijsbaanpad 9
 1076 CV Amsterdam
 The Netherlands
 tel. x 31-20-5703530

fax x 31-20-5703500

Email: a716hox@hasara11

Workshop on Rational Choice Theory and Networks

January 26-28, 1995

The Hague

The aim of the workshop is to think about future developments in which these two lines of research (rational choice theory and network analysis) are brought together. Organizers are Frans Stokman, Tom Snijders and Michel Forse.

For more information contact:

Frans Stokman
 Dept. of Sociology
 U. of Groningen
 Grote Rozenstraat 31
 9712 TG Groningen
 The Netherlands
 Email: F.N.STOKMAN@MAILBOX.RUG.NL

Canadian Sociology and Anthropology Assoc.

June 1995

Montreal

To submit a paper in the *Social Networks* session, contact Peter Carrington, Sociology Dept., University of Waterloo, Waterloo, Ontario, Canada N2L 3G1. Phone 519 888 4567 ext. 3961; fax 519 746 7326. Email: pjc@watarts.uwaterloo.ca

International Social Networks Conference.

July 6 - 10, 1995

London, U.K.

The conference is interdisciplinary in nature, bringing together academics from a wide variety of areas with a common interest in the development and application of social network analysis. The conference is sponsored by the University of Greenwich and the International Network for Social Network Analysis (INSNA).

Organised sessions will include the following:

AIDS/HIV	Change in Networks	Cognition
Communication	Community	Discrete Methods
Ego-Centered	Exchange	Inter-Organizational
Intra-Organization	Social Support	Statistical Methods
Technology	World Networks	Large Network Analysis

School of Business, University of California, Berkeley CA 94720, (510) 642-6423. Email: trond@haas.berkeley.edu.

JOURNALS

Research in the Sociology of Organizations: Special Issue on the Cross-cultural Analysis of Organizations

Co-editors: Samuel Bacharach, Miriam Erez and Peter Bamberger

Recent changes in the global economy and socio-political context have demanded that organizations adopt a more global approach to management. On the socio-political level, these changes include the breakdown of national barriers to labor force migration (e.g., NAFTA, Maastricht) and the resulting intensification of the cultural diversity of national labor forces. In the economic and business arenas, these changes take the form of the globalization of world product and service markets and the creation of more flexible, loosely-coupled, multi-national organizational structures in which strategic business units are widely dispersed and in which a wide variety of organizational functions (e.g., R & D, manufacturing) are contracted out to foreign "suppliers." In this context, organizational scholars can no longer afford to ignore the influence of cultural differences on both organizations and their members.

In response to the current demand for research having to do with cross-cultural organizational analysis, RSO is pleased to announce the publication of a special issue dedicated to the examination of both the micro and macro dimensions of culture and ethnic identity in and around organizations. Preference will be given to articles which attempt to bridge the micro-macro gap in the cultural analysis of organizations, and which are more sociological in nature. Papers submitted to this volume should be analytical as opposed to descriptive, with a focus on the organizational level.

Papers that either generate or test theories in which culture, ethnic identity, and/or related variables are the focus of attention will be positively considered.

The conference is being organised by the University of Greenwich. The venue is the Britannia International Hotel which is situated in London's revitalised Docklands.

Registration forms are available elsewhere in this issue of *CONNECTIONS*.

For information contact:

International Social Networks Conference
School of Maths, Statistics and Computing
The University of Greenwich
Wellington Street
London SE 18 6 PF
U.K.
Email: euronet@gre.ac.uk
Tel (+44) (0) 81 316 8706; Fax: 316 8665

**American Sociological Association
August 19-23 1995
Washington, D.C.**

Sessions of interest to social networkers:

Social Networks. Noah Friedkin. Graduate School of Education, University of California, Santa Barbara, CA 93106, USA. (805) 893-2840. Email: friedkin@edstar.gse.ucsb.edu.

Organizations. Ed Laumann. University of Chicago, 5848 South University Ave, Chicago IL 60637, (805) 893-2840. Email: eddie@cicero.spc.uchicago.edu.

Group Processes. Ed Lawler. Dept. of Organizational Behavior, School of I & LR, Cornell University, Ithaca, NY 14853 USA. (607) 255-0346. edward_lawler@qmrelay.mail.cornell.edu.

Quantitative Methodology. Trond Peterson. Haas

For example, authors may be interested in examining culture as a construct and thus attempt to identify key dimensions of work-related culture or ethnic self-identity. Alternatively they may wish to generate or test theory examining culture as a determinant of organizational structures and processes, intra- and inter-organizational political action and conflict, or of managerial responses to environmental or technological change. Theory may also be generated or tested regarding culture as a moderator of the link between organizational strategies and practices and a wide variety of individual, organization and/or industry-wide outcomes. We are particularly interested in papers which examine the cultural influences on the development of new organizational forms (e.g., "virtual organizations"), intra- and inter-organizational social networks, and multinational partnerships and joint ventures.

Papers which replicate tests of mainstream theory in alternative cultural contexts will also receive strong consideration. Examples of this might include studies exploring the generalizability of population ecology or neo-institutional theory to organizations in developing countries, as well as studies of the applicability of bargaining theory or theories of professionalization and deprofessionalization in the former Soviet Block. Finally, strong consideration will also be given to literature reviews and meta-analyses examining culture-related dimensions of mainstream organizational issues. Researchers having recently completed a program of culture-related research are strongly encouraged to submit a manuscript summarizing the results of their research efforts.

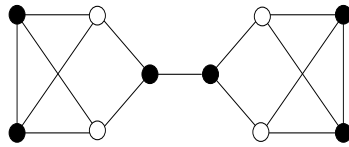
Researchers interested in submitting a manuscript for consideration are asked to submit four copies of

their manuscript by May 1, 1995 to: Peter Bamberger, NYSSILR, Ives Hall, Cornell University, Ithaca, NY 14853. All manuscripts will be subjected to double blind review.

JOBS

Dept. of Psychology, University of Illinois at Champaign-Urbana. The department invites applications for two tenure-track positions at the Assistant Professor level. Applications are welcome in any area of Psychology that is concerned with the effects of social factors on individual behavior. Relevant specialties include, but are not limited to, attitudes and social cognition, decision and group processes, personality assessment, personal relationships, and social or personality development. The primary criteria for these appointments will be excellence in research and teaching. Ph.D. required. The positions will begin August 21, 1995. Salary is dependent upon experience and qualifications. Interested persons should send a vita, a statement of research and teaching interests, at least three letters of recommendation, and pre/reprints to Lawrence E. Jones, Chair, Search Committee, University of Illinois, Department of Psychology, 603 E. Daniel St., Champaign, IL 61820 (217/333-3457). For full consideration, applications should be received by November 15, 1994. We may interview some candidates before the application deadline, but all applications received by that date will receive full consideration. The University of Illinois is an Affirmative Action/Equal Employment Opportunity Employer.

INTERNATIONAL SOCIAL NETWORK CONFERENCE



London, UK
July 6th - 10th
1995

The first joint conference brings together the 15th Sunbelt and the 4th European Network Conferences. The venue is the Britannia International Hotel in London's revitalised Docklands. The Hotel has extensive conference and leisure facilities and is located in a position which gives easy access to central London. It will therefore be possible for participants to make use of London's theatres, concert halls, restaurants, pubs and nightlife. The conference is interdisciplinary in nature, bringing together academics from a wide variety of areas with a common interest in the development and application of Social Network Analysis. The conference is sponsored by the University of Greenwich and the International Network for Social Network Analysis (INSNA).

Organised sessions will include the following:

AIDS/HIV, Communications Ego-Centred Networks Intra-Organization Technology	Change in Networks Community/Personal Exchange Theory Social Support World Networks	Cognition Discrete Methods Inter-Organizations Statistical Methods Large Network Analysis
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PAPER SUBMISSIONS: Papers and abstracts will be published and distributed at the Conference. Papers will **not** go through a formal refereeing process and may be submitted by the authors for publication in other outlets. Short or abbreviated papers are particularly welcomed. Papers in abstract form only are acceptable, but preference in scheduling presentations will be given to complete papers. Submissions should be sent to the organisers at the address below. Details of the format requirements for abstracts and papers are attached. The **deadline** for submission of both abstracts and papers is **1 April '95**.

KEYNOTE SPEAKER : Patrick Doreian, Department of Sociology at the University of Pittsburgh. Long time contributor to Social Networks and the current editor of the Journal of Mathematical Sociology. The keynote address will be on Thursday July 6th at 4.00p.m.

HOTEL RESERVATIONS: Complete the attached reservation form to secure accommodation at the Britannia Hotel. Costs are £75 per night single and £55 per person for a twin/double. These costs include breakfast, and lunch on Friday, Saturday and Sunday. Participants who wish to bring a partner who will not be attending the conference (and therefore taking breakfast but not lunch) will be charged an extra £15 per night on the single rate. Extra nights accommodation will be charged at £60 single and £70 double, including breakfast. Reservations should be accompanied by credit card information or a cheque to cover the first night's accommodation.

The Hotel has put aside a set number of rooms until the 15th of April. After this date they will be released onto the open market. The fact that this conference has brought together the European and Sunbelt Conferences may put pressure on the rooms. Participants are therefore urged to return their Hotel Booking Form as early as possible.

REGISTRATION FEES The registration Fee for INSNA members will be £60, for non-members £70 and for students £30. There will be an additional late registration Fee of £15 for anyone who has not paid before the 1st April 1995.

BANQUET RESERVATIONS There will be a Banquet in the Britannia Hotel on July 6th following the keynote address. The cost of the four course meal with wine will be £28 per person. The main course consists of corn fed chicken in a tarragon sauce. There will be a vegetarian alternative. Reservations for the Banquet should be made on the Hotel Reservations Form. The hotel will add the cost of the Banquet to the room charge.

NETWORK ANALYSIS WORKSHOPS Registration for workshops can be made on the enclosed conference registration form. Workshops available are:

Stephen Borgatti & Martin Everett -"An Introduction to Network Analysis Using UCINET"

Stanley Wasserman and Katherine Faust -"An Introduction to Social Network Analysis : Methods and Application".

Barry Wellman - "A Non-Technical Introduction to Social Networks Analysis".

FORMAT REQUIREMENTS FOR ABSTRACTS/PAPERS

For each paper to be presented a stand-alone abstract is required. The deadline for both abstracts and papers is 1st April 1995. Submitted abstracts and papers must be in **camera-ready form** (hard copy) on good quality paper and preferably laser-printed. They must satisfy the following format requirements.

1. Printed with 1"(2.6cm) left and top margin. The print-box is of size (9"x 6.3") i.e. (16cms x 22.9cms).
2. In Times Roman font, or similar at 12 characters per inch.
3. 1½ line spacing.
4. (i) No header page: just give title, authors, affiliation; abstract, keywords, and continue with the paper without starting a new page.
(ii) All diagrams and figures must be integrated with the camera ready hard copy submitted.
5. Page Limit: 8 pages. Manuscripts which seriously exceed this limit will not be included in the proceedings.
6. To aid on-site reformatting and printing a computer readable form of papers and abstracts should also be enclosed with the hard-copy master. Preferable formats are: Word-perfect, ASCII, but WORD or TEX may be used if the former is not available.

CONFERENCE REGISTRATION FORM

Send this form with payment or credit card details to:

International Social Networks Conference,
 School of Mathematics, Statistics and Computing,
 University of Greenwich,
 Wellington Street,
 London SE18 6PF.
 United Kingdom.

E-mail euronet@gre.ac.uk
 Tel: (+44) (0) 81 316 8706
 Fax: (+44) (0) 81 316 8665
 (Note: As of 1/1/95, 81 changes to 181)

Name

University

Address for Correspondence

.....

.....

City

County/State Post/Zip Code

Country. Tel:

Fax: E-Mail:

PAPER SUBMISSIONS

If you intend to submit a paper please give the preliminary title.

.....

.....

List Co-authors and their affiliation

.....

In which session would you like your paper to appear. (Please circle).

- | | | |
|-------------------------|-----------------------|---------------------------|
| a. AIDS/HIV | b. Change in Networks | c. Cognition, |
| d. Communications, | e. Community/Personal | f. Discrete Methods |
| g. Ego-Centred Networks | h. Exchange Theory | i. Inter-Organizations |
| j. Intra Organizations | k. Social Support | l. Statistical Methods |
| m. Technology | n. World Networks | o. Large Network Analysis |

Other (Please specify)

REGISTRATION AND WORKSHOP FEES

Note that registration includes a copy of collected Abstracts and the Proceedings of one of the sessions listed above. Please indicate the preferred volume. Other volumes may be reserved at £20 each:

Registration Fee: (INSNA members £60, other £70) -----
 Late Registration Fee £15) -----

Proceedings:

Volume Selected
 (Give identifying letter) -----

Additional volumes ordered: -----

Workshop Fees

Borgatti/Everett (£60/£30 student) -----
 Wasserman/Faust (£40) -----
 Wellman (£20) -----

TOTAL: =====

To ensure registration, this form should be either accompanied by a cheque in pounds sterling for the total amount, or alternatively participants can pay by VISA or MASTERCARD.

All cheques should be made payable to "**The University of Greenwich**".

Please charge my Access/Mastercard/VISA/Barclaycard (delete as appropriate).

Card Number:
 Start Date: Expiry Date:.....

If your card address is different from above please enter here:

.....

Signature:

HOTEL AND BANQUET REGISTRATION FORM**6th-10th July 1995**

Please reserve the following accommodation. (Tick as appropriate)

Single Twin/Double

Is this person participating in the Conference? Yes/No

If Yes please give name of person sharing:

Arrival date: Expected Arrival Time

Departure date:

Name

Address

.....

City

County/State

Country.....Post/Zip Code

Please save me _____ places at the Banquet of which _____ require vegetarian

Either complete the credit card details below or enclose a cheque for the 1st night's accommodation-(in pounds sterling), made payable to the "Britannia International Hotel".

Credit Card Name:.....

Credit Card Number:.....

Start Date:.....

Expiry Date:.....

Signature:.....

Please return this form as soon as possible, but to arrive no later than 15th April to:

The International Social Networks Conference,
 School of Mathematics, Statistics and Computing,
 University of Greenwich,
 Wellington Street,
 London SE18 6PF
 United Kingdom.

E-mail euronet(@)gre.ac.UK
 Tel: (+44) (0) 81 316 8706
 Fax: (+44) (0) 81 316 8665
 (starting 1/1/1995,81 changes to 181)

WORKSHOP ABSTRACTS

An Introduction to Network Analysis

Stephen Borgatti and Martin Everett

Thursday July 6th 8.30 - 3.00

A beginner's tutorial on how to analyze network data. The course begins with a general introduction to the goals, methods and concepts of network analysis, followed by a discussion of network data, including issues of collection, validity and representation. Then we start to analyze data. Three basic kinds of analysis are taken up. First, we consider how to measure structural properties such as actor centrality, network centralization and cohesion. Then we demonstrate how to explore network structure — detecting subgroups, core/periphery structures and locating actors playing similar roles. Finally, we consider how to correlate network variables and test network theoretic hypotheses. Course materials provided at no additional cost include **UCINET IV** and **KRACKPLOT** software, sample datasets, a glossary of network terminology, and a 20-page set of summary notes with recommended exercises.

Cost: £30 for students; £60 for all others

An Introduction to Network Analysis: Methods & Application

Stanley Wasserman and Katherine Faust

Thursday July 6th 8.30 - 3.00

This workshop will present an introduction to concepts, methods, and applications of social network analysis in the social and behavioural sciences. Social network analysis focuses on relationships between social entities and is widely used in the social and behavioral sciences as well as in economics, marketing, and industrial engineering. This focus on relationships requires a special set of methods distinct from the usual statistics and data analysis techniques used to analyze the standard "cases by variables" data. We will begin with the basic concepts and principles of social network analysis, including the elements of the social network paradigm and formal representations for social networks (graph theory and matrices). We will then discuss structural and locational properties of actors in social networks: centrality, prestige, and prominence, cohesive subgroups and cliques; equivalence of actors including structural equivalence and blockmodels; an introduction to local analysis including dyadic and triadic analyses; and basic distribution theory and statistical models.

The course text will be: Wasserman and Faust (1994). *Social Network Analysis: Methods and Applications*. Cambridge and New York: Cambridge University Press. We will discuss chapters: 1,2,3,4,5,7,9,10,13, and 15 from this book. We highly recommend that workshop attendees obtain this book in advance, and read the first few chapters prior to the workshop. **Cost: £40**

A Non-Technical Introduction to Social Network Analysis

Barry Wellman

Friday July 7th 9.30 - 12.30

The workshop introduces the underlying philosophy of social network analysis. It sketches the history of the paradigm, identifies its principles, distinguishes between whole network and ego-centered network research, and provides an overview of basic research methods, including block-modelling, clustering, and egocentric approaches using standard statistical packages such as SAS. It reviews highlights of substantive research in a number of areas (including community analysis, social support, intercorporate relations, politics, migration, and world-systems). Barry Wellman, University of Toronto, is the founder of INSNA.

Cost £20

NETWORK NEWS!

Network News is a regular column whose function it is to disseminate news about INSNA.

Sunbelt. Next year's Sunbelt conference will be held July 6-10 in London, England at the Britannia Hotel near Greenwich. Actually, it won't be called "Sunbelt" anymore, for reasons that I'm sure will quickly become evident in London.

Membership/Subscription Rates. Effective now, INSNA dues will go up to \$40 for faculty and professionals but will go down to \$25 for students. The net increase in revenues should be sufficient to keep pace with costs.

Please note that membership/subscription is based on the calendar year. No matter when you sign up for a given year, you get all issues of CONNECTIONS for that year, even if it was two years ago¹. If not otherwise specified, any payment sent in between now and this time next year will be applied toward 1995 membership.

Incorporation. By the time you read this, INSNA should be an official non-profit corporation. At the very least, this will mean fewer headaches at tax time and fewer times that I have to give other universities my personal social security number (some INSNA members have their universities pay their dues; these universities then demand a federal tax id from me). Details of the new structure will be published in the next CONNECTIONS.

SOCNET. The SOCNET list is running. It currently has about 200 subscribers, but very few messages. In a way, that is a blessing. The problem with most lists is that they inundate you with email, most of which you have little interest in. I strongly recommend that everyone subscribe to SOCNET so that networkers can be reached quickly when necessary (e.g. to announce a program change in an upcoming conference). Instructions for using SOCNET are given elsewhere in this issue.

INSNALIB. The INSNALIB Electronic Library has moved (but the old address will continue to work for another six months). The new address is **thecore.socy.scarolina.edu**, which is a SUN workstation running Unix. Users can retrieve files by changing to the **/pub** directory, and can contribute files by changing to the **/incoming** directory. Complete instructions are found at the back of this and all issues of CONNECTIONS.

The Library is a repository for network-related software, data and text, which can be accessed electronically via Anonymous FTP. Currently, the Library contains the UCINET 3.0 suite of programs, classic network datasets, short papers from the last European Networks Conference (ECOSNA), abstracts from recent Network conferences, and miscellaneous software. For INSNA members who do not have INTERNET access, all materials on INSNALIB are also available on 3.5" diskette for US\$5.

-- Stephen P. Borgatti

¹Back issues for most years are available.

Barry Wellman's Ties and Bonds

BBS

Steve Borgatti, INSNA's current intrepid leader, has received tenure at U South Carolina & promotion to Assoc. Prof.... **Andre Sik** will be at Kellogg Inst, Notre Dame U, Indiana, 9-12/94. (tel: 219-631-8524). American football fans note: Andre's taken to calling himself the "Fighting Hungarian".... **Barry Wellman** was featured in the Winter 1994 issue of *Lafayette Magazine*, doing a nostalgic retrospective of the Lafayette's triumphal victories in the College Bowl, 1962-1963. "We kicked Berkeley's ass," recalls the pusillanimous semiCanadian.... **Patricia Turner** (daughter of Jonathan & Sandy) is finishing her U Michigan history Ph.D. & has a job at Lehigh U, starting 9/94. She's one of the few network analytic historians, & seeing how hard it is for new Ph.D's to get history jobs, let's hope networking is a plus.... Mark Gottdiener moved from Cal-Riverside to be Chair of Soc, SUNY-Buffalo, 8/94.... **Alexandra Maryanski** promoted to Assoc Prof @ Soc, Cal-Riverside.... **Manoranjitham Santhira Segaran** received her Ph.D., 6/94, Soc, Coimbatore U, India. She's joining her husband in Pittsburgh....

Shin Watanbe (Sophia U, Tokyo) a visiting scholar @ Soc, UCLA to 29 March 95....tel: 310-825-131, fax: 206-9838.... **Herman Baars** received his doctorate at U Maastricht (Neth), 9/94.... **Rose Laub Coser** died 8/94; Prof. Emeritus of Soc @ Boston C & Stony Brook.... **Theodore D. (Dave) Kemper** has retired (@ age 67) from Soc, St. John's, NYC, but will continue his scholarly work via e-mail, etc. Dave's a proud new grandpa.... **Charles Wetherell** (Hist, U Cal-Riverside) is

the new father (11 Sept 94) of Christian Charles.... **Dave Tindall** has received a \$33K SSHRCC grant to study the British Columbia environmental movement & is now Asst Prof of Forestry & Soc at U British Columbia.... **Barry Wellman** spent a week in Taiwan, 4/94, sponsored by Ray-May Hsung (Soc, Tunghai U, Taichung). Another Tunghai networker is **Ruey-Ming Tsuey**, who recently received a PhD working with Ron Breiger at Cornell. Barry also lectured at Taiwan's Academia Sinica, among whose networking denizens is **Fu Yang-Chih**, a Chicago Soc graduate.... To add to his appointments to U Illinois' statistics, psychology and sociology departments, **Stanley Wasserman** is now cross-appointed to Illinois' Beckman Inst, an interdisciplinary research facility housing about 125 faculty from engineering, computer sci, physics and psych. Stan's collaborating with neuropsychologists there....

Karen Cook now Assoc Ed of *Annual Review of Sociology*. Its editorial committee includes **Michael Burawoy** (Soc, U Cal-Berkeley), **Paul DiMaggio** (Princeton) and **James House** (ISR, U Michigan).... **Dan Clawson** (Soc, U Mass, Amherst) new ed. of *Contemporary Sociology*. **Michael Burawoy** & **Janet Salaff** (Soc, U Toronto) on its board.... Leslie Howard on sabbatical as an "Investigador Visitante" at Colegio de la Frontera Norte, Tijuana, Mexico. US mailing address: P.O. Box "L", Chula Vista CA 91912. Tel: 011-526-613-3535, ext. 1208. Fax: 011-526-613-3556.... **Bruce Curtis** moving from Soc, Wilfrid Laurier U to Carleton U (both in Ontario).... **Harrison White** is staying at Soc, Columbia. He's also been elected to the executive cmtte of the Soc

Res Assoc.... **David Weinberg** has completed her Ph.D at Soc, U Cal-Berkeley & gave the grad student speech in the 5/94 graduation (title, "On the value of a good mistake"). She's now Asst Prof at U South Carolina.... **John Scott** moving from U Leicester to be Prof of Soc @ U Essex (Eng).... **Robert Hiscott** tenured at Soc, U Waterloo, Canada.... **Peter Carrington** (Soc, U Waterloo) elected "Member at Large" for the Logic & Methods of Research Cttee (RC33) of the Int'l Soc Assoc...

Patricia O'Connor has moved to Soc, U Limerick, Ireland.... **Rosemary Blieszner** promoted to Full Prof of Developmental Studies, Va Poly Inst.... **Janet Abu-Lughod** (Soc, New Schl, NYC) & Edward Soja (UCLA) have become the first sociologists to get a Getty Fdn grant -- to look at the political economy & form of NYC, Chicago, LA. Janet has also been elected to the Council of the AmSocAssoc.... **Beth Mintz** (Soc, U Vermont) & partner "Gooch" have adopted a daughter, Rebecca, now aged 3.... **Joel Levine** (Math Soc, Dartmouth) cross-appointed as Adjunct Prof of Biology.... Levine is on the steering committee of the new Math Soc section being formed in the AmSocAssoc, along with **Philip Bonacich** (Soc, UCLA) & **Eugene Johnson** (Math, U Cal-Santa Barbara) -- about 1/2 the cttee are network analysts.... **Debra Umberson** (Soc, Texas) now Deputy Ed. of *Journal of Health & Social Behavior*.... **Mara Adelman** taught in Shanghai during the past academic year.... **Lauri Pasch** (UCLA) has won the International Network for Personal Relationships' "Steve Duck Student New Scholar" award for her "Observation of social support transitions in marriage."....

Maureen Hallinan (Soc, Notre Dame U) elected president of the AmSocAssoc. Maureen was 1 of the original members of the EIES social network e-mail network in the

1970s.... **Lin Freeman, Kim Romney** and **Duncan Luce** have all unexpectedly taken early retirement from U Cal-Irvine. Because the Cal system has much more money in its pension account than its salary account, it offered lucrative early retirement terms. Lin continues to edit *Social Networks* from Cal-Irvine.... **Maristella Roca**, former typist for *CONNECTIONS* (in Toronto) and current playwright has received the prestigious 1994 "Chalmers Award" (worth \$10K) for promise and excellence.... **Steve** (aka S.D., Soc, U Vermont) & **Terry Berkowitz** are opening a gallery/conference centre in Underhill, on the road to Stowe. Terry is a superb sculptor....

Ralph Miliband (LSE, NYU), author of the political economic *The State in Capitalist Society*, died 5/94 in London at the age of 70.... Sir **Karl Popper**, who taught us in *The Logic of Scientific Discovery* (1934) that it is falsifiability and not proof that counts died of cancer in Croydon, Eng. at the age of 92. And to think that the PoMos think they discovered this for themselves.... **Neena Chappell** to direct Centre on Aging, U Victoria, Canada. She's also received a \$135K grant from Health & Welfare Canada to study "care givers to adults in British Columbia".... **Russ Bernard** is spending the academic year (to 7/95) at the Institut fur Volkerkunde (Thomas Schweizer's shop), Albertus-Magnus Platz, 50923 Cologne (Koln), Germany; e-mail: alv16@rs1.rz.uni-koeln.de. As Russ broke his right arm in August, he's gotten used to the sound of one arm keyboarding.

BBS-2

Jeremiah Kaplan Dies. The founder of The Free Press died 8/93. Although it is now a boring Macmillan imprint, The Free Press was a wonderful publisher when Kaplan headed it, 1947-1960. Kaplan, teaching undergrad sociology at the University of Chicago, founded FP to publish Durkheim's *Division of*

Labor, works by Simmel, Malinowski Weber and Kropotkin, and other out-of-print books -- many of which had never been translated into English. He also published Merton's *Social Theory and Social Structure*, Parsons' works, and other pathbreaking tomes.

Elliot Liebow Dies. The author of *Tally's Corner* and *Tell Thom Who I am: The Lives of Homeless Women* died of cancer in Washington, 4 Sept 94, at the age of 69. Certainly the superb and network analytic *Tally's Corner* (1966), an ethnography of Washington black streetcorner men, was one of the strongest influences on my scholarship. After that book, Liebow headed the Center for the Study of Metropolitan Problems (aka the Center for the Study of Work and Mental Health) at NIMH during the urban-conscious late sixties and seventies. There he funded the research that led to Claude Fischer's *To Dwell Among Friends* and my own second East York study "Different Strokes,..." etc.). Elliot fought like a tiger within the US government to get my "foreign" study approved.

In 1984, after being told he had less than a year to live, Eliot left the NIMH and began volunteering at a soup kitchen and a homeless shelter for women. After his cancer went into remission, he began taking the ethnographic notes which led to his book on homeless women. I saw him at the 1990 Washington American Sociology meetings, and he seemed healthy and at peace. A nice Jewish boy, Eliot joined the Marines in WW2 and fought in the South Pacific; he earned his Ph.D. at Catholic U for *Tally's Corner*, and received its President's Medal in 1990. Among his other awards were the C. Wright Mills award of the Society for the Study of Social Problems (1967), the Gunnar Myrdal award for government (in both 1980 & 1984), and the Macy award of the National Alliance to End Homelessness (1994). He leaves his wife of 40 years (Harriet Liebow), two daughters, and

many admiring scholars. [Bits of this adapted from the *NY Times*, 7 Sept 94].

Turning On. The psychoanalyst Erik Erikson, who died 12 May 94, was a member of the Harvard Social Relations Dept. in the 1960's along with Talcott Parsons, George Homans, Harrison White, Chuck Tilly and myself (some of us were more noticed than others). I remember being so jealous of Erikson's Viennese accent, retained after 30 years in America. "If only I could sound like that," I thought, "then people would think that I am profound." Alas, New York & Vienna have many things in common, but not accents.

Timothy Leary, the notorious LSD advocate of the 60's, had been a Soc Rel'er some years before (I think as an Asst Prof), and he returned in 1967 to speak to a large audience. During the talk, Leary launched into his mantra, "Turn on, tune in, drop out." Erikson seized the moment, stood up, loudly said, "Mr. Leary, I drop out!" and stalked out of the room.

Coincidentally, the same week that Erikson died, Leary was arrested for unlawfully smoking (a nicotine cigarette) in a public place: a Texas airport.

Greg Heil Resurrected. Greg, you may recall, was the principal programmer for the early White-Breiger-Boorman blockmodel stuff at Harvard in the 1970s. He later was in Toronto for a while, and worked with Steve Berkowitz & Peter Carrington to develop a goodness of fit test for blockmodels. Greg dropped out of (my) sight for a while, but I received an email letter from him, 23 May 94:

"I wanted to return by gratitude to my colleagues who have stood beside me thru the twists & turns in our lives. Corporate, personal & global. It is a wild time & 1 of renewal.

"In my own search for stability & growth, I have decided to accept a 3-year research appointment in the (U Washington) medical school's Dept of Biological Structure. I will be working on the Human Brain project. This a project between the Digital Anatomist project and the Depts. of Neurosurgery & Radiology. I expect to be concerned primarily with the intersection of volume rendering & surface approximation. We will be rendering the cortex & its mal/functions, including especially speech, sensori/motor & epilepsy. While we improve our rendering technology, we will develop a spatial database system. Besides the imaging data, we will include standard anatomical naming models, records of intraoperative electrical stimulations & their effects on mental functioning. I expect these datasets to inspire, as a statistical resource, improved methods for understanding the correlations between cortical spatial organization & mental functioning. Personally, I will enjoy the academic emphasis on 'rapid prototyping' as a development model. Tools I currently expect to be doing development with [include] S+, PERL, C, AVS, etc. As metastable a witches' brew as any I've heard." [e-mail: gheil@cs.washington.edu].

Toronto Sociology Cashes In. **Laura Garton** has been awarded a 3-year SSHRCC doctoral fellowship, joining continuing SSHRCC Fellows, **Stephanie Potter** and **Scot Wortley**... **Milena Gulia** has been awarded an Ontario Graduate Scholarship.... **Beverly Wellman** and **Merrijoy Kelner** have been awarded a two-year SSHRCC grant for \$138K to study pathways to alternative health care. (If you danced with us at the end of my keynote speech, you were part of the pilot study.). Bev's new e-mail address is "bevwell@epas.utoronto.ca".... **Barry Wellman** (that's me) has been elected to the Sociological Research Assoc. I've received a Hallet Exchange Fellowship to visit Israel for 6 weeks next May. I've also been awarded a

three-year SSHRCC grant for \$114K to study the social networks of personal communities and virtual workgroups... My proposal was ranked 4th out of 137 by the SSHRCC committee while I'm even prouder to say that Bev's was ranked 3rd....

Bonnie Erickson is Acting Director of the Centre for Urban & Community Studies (INSNA's founding home) 1994-1995 & then Associate Director for the following 4 years... **Leslie Howard** (now at Soc, Whittier C) returned to visit this Centre, 7/94, while Andre Gunder Frank (U Amsterdam) visited the Soc Dept.... **Andre Gunder Frank** has taken up residence in Toronto; he can be reached c/o Soc, U Toronto.... **Harriet Friedmann** has been appointed to the Toronto Board of Health's Food Policy Council. She'll serve as a food systems analyst to this panel of citizens & experts studying issues related to food production & distribution -- including hunger in Toronto & the impact of food production on Ontario's environment... **Cito Gaston**, the world's leading exponent of Community Saved, received a well-deserved honorary doctorate... The aforementioned **Dave Tindall** received his Ph.D. at Toronto, Fall, 1993.... My coauthor & RA **Renita Wong** (Soc, OISE), received a grant to attend the "Writers of Colour" conf, Vancouver, 6/94.... Another coauthor & RA, **Milena Gulia**, won the U Toronto's prize as the outstanding student in sociology & urban studies.... And our newest recruit, coauthor & RA **Nancy Nazer**, just received an award from the U Western Ontario for the most outstanding undergraduate achievement in the entire university, combining academic and non-academic activities.

French Networks Take to the Rails. As part of a reorg. of the CNRS, LASMAS has shifted its centre of gravity to Caen, but retains an office at IRESCO, 59 rue Pouchet, Paris. This means that several network analysts spend much time analyzing French trains. **Karl van**

Meter has moved to LASMAS-IRESO (CNRS/Paris-Caen) from LISH and will happily continue to edit the *Bulletin de Méthodologie Sociologique* there. **Claire Bidart** has moved to LASMAS (Caen) from Marseilles. With Alain Degenne, Alexis Ferrand, Marie-Odile Lebeaux, Lise Mounier & Sebastien Reichmann also involved, even more than ever, LASMAS has become *the* network centre of France, and a leading one of Europe.

Network Tools. Clare Wenger has developed a PANT instrument to help practitioners assess what type of personal networks elderly people have. She's also written a practitioner's guide, *Support Networks for Older People* (cost 6 pounds). [Ctr for Social Policy Res., U Wales, Bangor UK LL57 2DG].

SPSS has bought SYSTAT, but claims that it will keep it as a separate product. We'll see. Actually, a merger might be useful, because SYSTAT seems to write tighter code. SPSS 6.0 for Windows includes CHAID for identifying predictors and relationships between variables. Sounds like a resurrection of John Sonquist's wonderful old Automatic Interaction Detector.

Somewhat along the same lines, *Knowledge Seeker* is a Windows package that employs cluster analysis techniques & decision trees to poke thru data & find statistically interesting relationships. You can print a tree or create crosstabs. It can handle large files & import from SPSS, dBase, Lotus, & plain or delimited ASCII. I don't know anyone who has ever used it so I can't give any evaluations. Cost C\$899, Angoss Software, 430 King St W, Ste. 201; Toronto Canada M5V 1J5. tel: 416-593-1122.

"Network Analysis, Culture, & the Problem of Agency" That's the title of a curious paper by Mustafa Emirbayer (New School, NYC) & Jeff Goodwin (New York U) which leads off the 5/94 issue of the Am J of

Soc. They claim that network analysis "has never been subjected to a theoretically informed assessment & critique," & especially twit us for ignoring culture & agency. Yet their command of the literature seems quite thin, they've not been INSNA members, & I don't recall seeing them around the Sunbelt, do you? Reportedly, they did show up at the last New Orleans Sunbelt -- with this paper already in press.

I'd be curious what anyone else thinks of this piece, as I'm at the Soc Sci Hist Assoc with these folks, 13-16 Oct 94. Write me asap: wellman@epas.utoronto.ca

New Journals. *Personal Relationships:* The 1st issue is out, with 2 relevant articles on intimacy. **Rebecca Adams** (Soc, U North Carolina-Greensboro) & **Graham Allan** (Soc, U Southampton) are on the ed. board. Ed: Patricia Noller, Psych, U Queensland, Brisbane, Queensland 4072, Australia. Fax: +1-61-7-365-4466.

Sage has launched 6 new quarterly journals. (Judging by the editors' blurbs, most won't be edited for tight style or for modesty.) More info. from Sage Journals Marketing, 2455 Teller Rd., Thousand Oaks, CA 91320.

Qualitative Inquiry is edited by Norman Denzin (Soc, U Illinois) & Yvonna Lincoln (Texas A&M) "to provide a forum for qualitative methodology," especially papers that "transcend disciplinary, racial, ethnic, gender, national, & paradigmatic boundaries, including ms. that experiment with non-traditional forms, contents & modes of representation." It doesn't want ms. that merely use qualitative methods "unless methodological issues are paramount".

The *European J of Women's Studies*, edited by Kea Tjardens (U Amsterdam) & Mary Evans (U Kent) "to answer the urgent need for an int'l journal that brings together the important

work currently being undertaken within women's studies in Europe".

Organization: *The Interdisciplinary J of Org., Theory and Society*, edited by Gibson Burrell (U Warwick) and Mike Reed (U Lancaster). "will address a broad spectrum of issues and interdisciplinary perspectives as the foundation for a 'neo-disciplinary' organization studies relevant to the 1990s & beyond". [Sounds PoMo to me.]

Philosophy & Social Criticism, edited by David Rasmussen (Boston Col) will present "original theoretical contributions to the latest developments in social & political thought, emphasizing particularly the contributions of continental scholarship as it affects international theoretical developments."

The Euro. J of Int'l Rels, edited by Walter Carlsnaes (Uppsala U) "aims to stimulate & disseminate the latest research in int'l relations. The journal will address methodological & epistemological questions as well as conceptual & empirical developments within the major sub-areas of the field."

Party Politics, edited by David Farrell & Ian Holliday (U Manchester) & Kenneth Janda (Northwestern U) will discuss "the character and organization of political parties, and their role within their various national political systems," including their historical development, party policy, ideology, electoral programs, changing party systems, and the democratic process.

Processed World is a serious fun journal aimed at those who view the computerized world as a front in the battle against bureaucracy and capitalism. Some of its articles discuss computerized control of the workplace or how employees can sabotage systems. Published by San Francisco's Bay Area Centre for Arts and Technology (BACAT).

Special Issues and Upcoming Conferences.

The *Journal of Social and Personal Relationships* is going to have a special issue devoted to rethinking the development of families over the life course: "Different Paths, Different Voices: Rethinking the Development of Families over the Life Course." The eds. say that society has vastly changed since key theoretical perspectives were first advanced. Little is known about the relevance of these perspectives to families not typically considered by researchers and extend thinking about family adaptation to life transitions. We invite submissions that focus on issues of ethnicity, social class, gender, sexual orientation or consider community, neighborhood or social context in describing family development. Contact Catherine Stein, Psych, Bowling Green State U, Bowling Green OH 43403-0228; tel: +1-419-372-2301; fax: 372-6013. Better call first -- the deadline was 30 Aug 94. [Look folks, I can't help it if CONNECTIONS only comes out twice a year now.]

The *International Network for Personal Relationships* will hold their next conference 1-5 June 95 in Williamsburg VA (a lovely place). Invited speakers include Graham Allan. Conference organizer: Constance Pilkington (Psych, William & Mary C, Williamsburg VA 23187-8795, USA); tel: +1-804-221-3898; e-mail: wpsinpr@wmmvs.cc.wm.edu. Deadline for receipt of submissions is 15 Nov 94. The 1996 conference will be in Seattle, 28 June - 2 July. Barbara Sarason (U Washington) heads the local organizing committee.

Computer Networks are Communication Networks are Social Networks. With a bunch of Toronto colleagues, I'm going to write a piece for the *Annual Review of Sociology* on the impact of computer networks on social networks (at work, for communities, etc.) If you'd like us to try to fit your own work in to this review, please mail it to me

asap @ Centre for Urban & Community Studies, Univ of Toronto, Toronto Canada M5S 1A1. Only finished work please & no e-mail file transfers (I know this goes counter to the spirit of the piece, nevertheless...).

Anyone looking for a research project should consider chain electronic mail. Last spring, I received 6 copies thru e-mail of an apocryphal tale of a Niemann-Marcus cookie recipe. This one was innocuous although time-wasting, but I have seen some slanderous accounts go hurtling thru the Internet.

Bell Canada is now introducing personal phone numbers. Much like logging into e-mail, wherever you are located, just punch your code into the phone and your calls will find you. Talk about Community Liberated and the placeless society.

Basketball Networks. On April 1, **Nan Lin** emailed that tickets for Duke's NCAA "Final Four" basketball game were costing \$3K each. Now we know what Nan has been doing in Tianjin. Many teams have sports psychologists, but the Chinese basketball team apparently has made Nan the world's first sports sociologist. They, at least, realize that basketball is a team game where interactions matter more than individual motivations. This continues the tradition started by **Lin Freeman** who has been charting who-passed-to-whom in the NBA for years. (Guess all basketball networkers must be named Lin.) Indeed, it was Freeman who used block-modeling to discover a key reason why the Philadelphia 76'ers have remained losers: one of their players passed to the opposition more than to the teammates. Now if only the CIA knew about blockmodelling, the US might have been spared its current spy scandal.

Anatol Still Twinkling and Tinkling. Bev & I attended a wonderful piano concert by Anatol Rapoport (accompanied by his violist son Anthony) at the U Toronto, 31 May 94.

Anatol, resplendent in a wing collared shirt, played vigorously for about 2 hours, frequently singing along as he played Beethoven (2nd piano sonata), Debussy, Prokofiev's toccata, Chopin's sonata (op. 58) and Rebecca Clark's sonata for viola & piano. These are no easy pieces, and one source tells me that Anatol almost had a career as a professional concert pianist.

Tillyfest. Friends, students & fans of Charles Tilly should reserve 6-9 Oct 1995 for the *Tillyfest*, an informal gathering in honour of Chuck. It's pay-your-own way (cheap hotel rooms will be available), present a paper if you'd like, with a party on Saturday night. The dates have been carefully chosen to be both a US (Columbus Day) & Canadian (Thanksgiving Day) holiday.

Send abstract or paper by 30 March 1995. Only extended (2-3 page) abstracts or papers accompanied by a registration fee will be accepted, subject to refereeing of course. Registration: till 30 March 95 -- \$20; after 30 March 95 -- \$30; at the door -- \$40. Students half-price. There's a banquet + a *Tillytalk* for \$45 on Sat nite (students full price). Make checks out to Centre for Urban & Community Studies.

Tillyfest will be hosted by the U of Toronto's Soc Dept, Centre for Urban & Community Studies, & Innis College. Barry & Bev Wellman are the organizers. Write for info to Paul Gregory, Conf. sec., *Tillyfest*, CUCS, 455 Spadina Ave., Univ of Toronto, Toronto M5S 2G8. E-mail: pgregory@epas.utoronto.ca. Fax: +1-416-978-7162; tel: 416-978-2072. Book your own room (approx C\$69) at the Journey's End Hotel, 280 Bloor St -- mention Centre - *Tillyfest* for a discount. Tel: 800-228-5151 or 416-968-0010.

C u there !!

Statism Breeds Networks: A Conjecture. In the bad old days of the Cold War, U.S.

policymakers worried that the centrally-planned Communist states had a comparative advantage: They'd be able to use their centralized planning and management systems to marshal resources efficiently to meet national goals. Henry Kissinger, Nixon's *eminence grise*, used to make this argument often in order to spur Americans to greater effort.

It's fascinating, therefore, to read John Logsdon and Alain Dupas' account of the Soviet effort to send a person to the moon in the 1960s [*Scientific American*, 6/94, 36-43]. They demonstrate that the Soviet program was devastated by bureaucratic infighting between design institutions. The leaders of these institutions could not work with each other, in part because one had helped send another to a concentration camp in Stalinist days. Networks strongly affected who got tabbed to do the job. And until 1964, it helped to have Sergei Khrushchev (Nikita's son) on your team. "That family link offered a great advantage in a system where such personal CONNECTIONS were often all-important" (p. 39).

My conjecture is that we can expand this example: In systems with high bureaucratic rigidity, informal networks become more important. As Michael Burawoy and Endre Sik have shown, the bureaucracies impede practical efforts to marshal resources (contra Kissinger), and networks become vital in order to get things done. If the history of the West in the past 200 years has been the substitution of market relations for network relations (albeit the markets are embedded in a substrate of networks), the history of Eastern Europe in the past 60 years has been the substitution of networks for bureaucratic institutions in the practical accomplishment of things.

Small Worlds Verified. One of the fun things I always bring up at cocktail parties is that

network analysts estimate that people have about 1500 informal relationships. But my interlocutors always were skeptical. Deep down, so was I. The wonderful world of computing suggests that this may be a low estimate -- for me, at least. I've been compiling a database of my relationships for the past two years, and it has now hit 1,278. At the same time, my e-mail alias list is at 519. (The 2 lists overlap a lot.) These numbers are low: they usually include only 1 member of a household and they omit a lot of disparate people: too local to enter (i.e., neighbours or fellow members of my department), people from the past whom I haven't contacted recently, really weak ties, and correspondents, whose addresses are so straightforward (Prof X, Dept Y, Univ Z) that all I need to find them is a list of the universities' cities and postal codes.

I'm starting to believe that the true number for me is over 2,500 relationships. I acknowledge that I may have an unusually high number of ties (*Social Networks* has a paper showing this), but I am not foolish enough to believe that I have that many more ties than most. If anyone has this kind of data, please send me your numbers and I will compile them and do a little piece for *CONNECTIONS*. I promise not to publish your name without permission.

Memories of Jackie. Jacqueline Kennedy Onassis worked for many years as an editor at Doubleday. A Toronto literary agent met with her in the early 1980s to discuss a new book, a companion volume to the "Treasures of the Vatican" art exhibition. Those at the meeting wondered about which important person they could find to write the books' introduction. "The Doubleday editors began silently flipping through their mental rolodexes, then realized who was in their midst -- She Who Knows Everyone. Heads turned toward Jackie. Pausing to think only briefly, she said, "Well... I could get the Pope." ["Noises Off", *Toronto Globe and Mail*, 26 May 94.] I was cheered to

learn that in Jackie's last decade, her frequent companion was a short, balding Jewish man.

World Congress of Sociology (Bielefeld, Ger, 7/94). *Best line of the Congress:* "Haven't I seen you in April at the Nudist workshop in Hershey, Pennsylvania?" Uttered in the Movenpick Hotel elevator by someone who's been very close to me for the past 31 years. The elevator audience burst into rapt silence. As all good analysts know, NUD.IST is a qualitative analysis program, available for the Mac & PC.

Almost as Good a Line: Dialogue between a session chair & a paper presenter:

Chair:	Are you finished?
Presenter:	No, I'm Swedish.

Actually, Ray Pawson, secretary of the ISA's Methods research committee (RC 33) put this out in their newsletter: filled with tips for dealing with international conferences.

New Leader is a Closet Network Analyst: Emmanuel Wallerstein (Soc, SUNY-Binghamton), the world-systems guru, was elected pres. of the Int'l Soc Assoc. for the next 4 years. Manny is, I believe, the 1st American to head this organization. Queries: Does this mean that the rest of the world has lost its fear of American core dominance? Or is Wallerstein sufficiently unAmerican enough to qualify? Or has world-systems theory become tame enough to qualify? To repeat a theme from a previous column, I keep meditating on how the US government outrage about trade imbalances is so much less with respect to China than to Japan. I suspect that this is because it is US-controlled corporations are heavily profiting from their Chinese exports while US interests control few Japanese exports. Note that the only US government outrage about China is with respect to state controlled corporations, competitors of the US-controlled corporations.

In short, as Harriet Friedmann has long pointed out, it's economic interests as well as states who are players in the world system (see Friedmann's article in Berkowitz and Wellman's book, 1988).

4 Years On: At the time of writing, the next World Congress will be held in 1988 in either Montreal or Melbourne.

Dutch Treat: Before the Congress, I spent a few days at Groningen, Neth., including a day at the Interuniversity Center for Social Science Theory and Methodology. I'd become aware over time of the Dutch interest in social network analysis, but it wasn't till my visit that I realized what a major shop the ICS is. Among the Groningen stalwarts are Frans Stokman, Tom Snijders, Siegwart Lindenberg and Henk de Vos, with Henk Flap participating in the ICS from Utrecht. They have a large doctoral program, with teaching in English, and they would welcome visitors & students from other lands. Address: ICS/ Department of Sociology, Heidelberglaan 2, 3584 CS Utrecht, Neth.; tel: +31-30-531-967; tel: 534-4405; bedaux@fsw.ruu.nl

Couplings. Bet you didn't know that John Sonquist & Chuck Tilly were classmates @ Elmhurst, Illinois High School. I saw Sonquist in LA, 8/94 @ the ASA annual meetings. (John hasn't been coming to Sunbelts since he took early retirement.) He's in great shape!

Another improbable couple: Manny Schegeloff (UCLA) & Nicholas J. Demereth III were roommates as Columbia undergrads.

Speaking of the ASAs & friendship, the sight of the meetings was Joel Levine (Dartmouth) commuting into sessions, riding postilion on former Harvard classmate Phil Bonacich's (UCLA) motorcycle.

And here's a saying about reciprocity I saw on a T-shirt in LA: "Keep a Woman's Right to Choose -- Unless the Pope is Free to Babysit".

Alan Funt, the creator of television's *Candid Camera* (the show that inspired Harold Garfinkel) was Kurt Lewin's research assistant at Cornell U in the 1930s. [Donna McCrohan, *Prime Time, Our Time*, Rocklin, CA: Primo Press, 1990, p. 141].

"[Prince] Philip [of Britain] is unfaithful, repeatedly & with a variety of women. Most unforgivably, he becomes involved with the Queen's own cousin, the younger prettier, more popular Alexandra, in a relationship that will continue for several decades, long past the time when she marries & has children of her own... We have many secondary tales of other adulterous liaisons, children of suspicious or irregular parentage... [such as] Philip & Merle Oberon, his "mink knickers" come-on to *The Globe's* own Serena French, the out-of-wedlock children of Philip's beautiful French friend Helene Cordet, the Queen's close relationships with courtiers such as Harry Porchester & Patrick Plunket.... One English society magazine even made so bold as to compare, with photographs, the features of Prince Andrew & Lord Porchester, Prince Edward & the 7th Baron Plunket." [Patricia Holtz, "Royal Reading to Make your Tiara Tremble," *Toronto Globe & Mail*, 23 June 94] review of Nicholas Davies, *Queen Elizabeth II: A Woman who is not Amused* (Birch Lane Press).

"How a Man Became His Own Grandfather: I married a widow who had a daughter. My father visited our house frequently & fell in love with my stepdaughter & married her. Thus, my father became my son-in-law & my stepdaughter became my mother, for she was my father's wife. My stepdaughter also had a son. He was, of course, my grandchild & my brother at the same time, because he was the son of my father. My wife was grandmother,

for she was my mother's mother. I was my wife's husband & grandchild at the same time. Since the husband of a person's grandmother is his grandfather, I was my own grandfather." [Advice columnist Ann Landers printed this "essay" that someone sent her, *Toronto Star*, 24 July 94].

A friend just told me that she and her husband were *separating* & probably divorcing after many years of marriage. It made me realize that in a decoupling relationship, the person who tells his/her side first tends to get create the legitimating account and keep the friendship.

"*Somali* society is patrilineal & polygamous -- and ... it turns out that marriages are surprisingly unstable. [Because] Islamic divorce [is] conveniently easy (for men), ... women often end up providing the nodal points of kinship networks & social cohesion." [Stan Persky, "Brutal Somali Memories," *Toronto Globe & Mail*, 23 June 94; review of *Aman: The Story of a Somali Girl*, as told to Virginia Lee Barnes & Janice Boddy (Toronto: Knopf Canada).

Corporate Interlocks. The day before he allegedly knifed to death his wife and her friend, sports hero **O.J. Simpson** attended the board meeting of the company that imports Sabatier and Swiss Army knives to the U.S. I read this in *The New York Times* [23 June 94] rather than in *Mad Magazine*.

Harcourt General, which started out as the publisher Harcourt Brace (including Academic Press) also owns *Sea World*.

John Aristotle Phillips was the Princeton grad student who stirred up things a few years ago by publishing a paper on how to make an atomic bomb. John is now living in Washington & publishing CD-ROMs of campaign contribution records filed with the Federal Election Comm -- such as a list of

every political action committee & individual who has given \$200+ to a Federal candidate since 1986. [Source, Jim Seymour, *PC Magazine*, 13 Sept 94].

Pepsi-Cola has returned to Iran for the first time since their assets were seized in 1979 after the Islamic revolution. Pepsi is being produced in the holy city of Meshed by a corporation that is owned by a religious foundation that oversees pilgrimages to the city and owns most companies there. [*Toronto Globe and Mail*, 29 June 94]

In an effort to curb corruption in **Shanghai**, local party head Wu Bangguo has issued the following directive to cadres: "Thou shalt not seek monetary gain, thou shalt not accept bribes, thou shalt not become drunk, thou shalt not gamble, and thou shalt not lust after women." Cadres will also be held responsible for the behavior of their employees and family members. Yet the *South China Morning Post* (13 Dec 93) reports that "corruption -- or the cultivation of friendships, if you prefer -- has been the oil that has kept the wheels of business and government administration turning.... Hong Kong businessmen in particular would be distinctly inconvenienced if their friends in the Government stopped doing them favours for fear of overstepping the bounds of moral acceptability."

The **CIA** has offered a reward of \$55M for the return of 1,000 Stinger rockets that they once gave to Afghani guerrillas to fight the Soviet-backed regime. The hand-held rockets can shoot down a plane, and the CIA fears that the Afghans will sell them as part of the secondhand weapons trade. [*Science for Peace* (Canada), 11/93]. Guess the CIA never heard about two-step flows; I just hope the third step isn't my 747 -- or yours.

Core-Periphery. Basketball great **Michael Jordan** earned US\$20 million in 1992 to promote Nike shoes (Air Jordans, etc.). That's

more than the entire annual payroll of the Indonesian factories that make them. [Source: Richard Barnet & John Cavanagh, *Global Dreams: Imperial Corporations & the New World Order*; NY: Simon & Schuster]. Which gets me to thinking: Aren't all folks who talk about free trade as being "good for America" (or you plug in the name of your favorite country) confusing what is good for finance capital with what is good for the larger populace? For example, Barnet & Cavanagh point out that after the American government opened up the Japanese market for microchips, Texas Instruments, a prime beneficiary, started designing these chips in India and Philippines (lower engineering costs) and manufacturing them in Asia. And the push to open Japan to US food imports has enabled Philip Morris (which owns Kraft and General Foods) to import cheeses from its affiliates in Australia, Denmark and Italy.

"Beijing's control of the Chinese economy and society is fading rapidly.... Beijing pretends to rule the provinces & they pretend to be ruled by Beijing.... Its share of both total investment & the total tax take is shrinking. Most investors now ignore Beijing & strike local deals. The provinces, especially the rich ones on the coast, increasingly ignore Beijing & get on with their own business.... Trade between the provinces is falling, compared with trade between the provinces & the outside world. [Gerald Segal, "Beijing's Fading Clout," *New York Times*, 25 May 94].

Short Schticks

Most Unlikely Affair: According to the *NY Times*, 4/94, Laurence Olivier and Danny Kaye were lovers. Talk about mixed relationships!

Father-Daughter: Did you know that Anne Oakley, author of *Housework*, is the daughter

of Richard Titmuss, author of *The Gift of Blood*.

The Truth about Yuppies Revealed: "Evian" spelled backwards is "naive".

Editorial Networks: Next time you scan the editorial board members of *Sociological Forum*, notice that just about all have passed thru Stony Brook in one form or another.

Generation X-2: Some of us 50-somethings thought that an era had ended when Jackie Kennedy died last spring. But I *knew* it when Mick Jagger announced that the Rolling Stones are spending 6 weeks rehearsing in Toronto this summer because it's "clean and safe". Keith Richards was spotted in Shoppers Drug Mart buying unflavored Metamucil. Is this what "Sympathy for the Devil" brings? Did Godard know what "2+2" eventually would add up to?

[*Postscript:* Bev & I saw the Stones' show, 8/94: Stones still rule, but the entire audience was 25 years less experienced than us & smoking *nicotine* cigarettes. Never trust anyone under 30; they can't even smoke right. "Heard the Stones before?" my drunken neighbor asked me. "Before you were born," I barked.]

Pushing It: In 7/94 I heard Peter Laslett give his "the third age is wonderful" lecture. "I do 60 pushups a day, walk up 14 flights of stairs, cycle through London," etc. When I said, "Peter, at any age, you shouldn't cycle through London, he gave me a true demographer's reply: "My life expectancy is only 8 years. Better for me to have my fun now, and if I die tomorrow, only 8 years are wasted. That's better than someone cycling at the age of 20 and wasting 55 years. Peter also noted that he was the oldest in the room. I looked around; I was the second oldest.

Eldercare: Singapore has passed the "Maintenance of Parents" bill, compelling

adult children to provide financial support to needy parents. Popularly called the "sue your son" bill, children who fail to comply are liable to fines & jail. [Financial Times, UK, 15 July 94].

Hepburn's Way: "She always said, 'Keep trying. Take care of the small circle around you. When you have succeeded with them, then move outwards, 1 small step at a time.'" [Sean Hepburn Ferrer, talking about his mother Audrey Hepburn, at the founding of the Audrey Hepburn Hollywood for Children Fdn. [*Miami Herald*, 4 Sept 94].

The English Way: "Before young people learn how to handle relationships with the opposite sex, the opportunity should be given for them to learn about healthy relationships with those of the same sex." [V.G. Pierce Jones, letter to the *Daily Telegraph*, 11 July 94.]

The PC English Way: "Staff at the Univ. of Central Lancashire [a renamed poly?] may no longer introduce their spouses or secretaries with the usual 'This is my wife,' or 'This is my secretary,' according to the university's new equal-opportunities booklet. 'People should be introduced by their full names & not their relationship with another person,' says Maureen Dearden, university press officer. 'Saying "my" gives a sense of ownership & hierarchy. This is an egalitarian institution.' If people wish to indicate a relationship with the person they introduce, they should find a suitable alternative, Dearden says. For example, 'This is Amanda White. We are married.' Or 'This is Amanda White. She performs clerical duties in this office.' [*Toronto Star*, 25 Aug 94].

The American Way: I was flying to the U.S. 11/93. As usual, U.S. Immigration said hello at the Toronto airport. But where such chats had been perfunctory for 100+ trips during the

past 20 years, the inspector (male, aged about 25) started the following dialogue:

US: Citizenship?

BW: American. I'm a 'landed immigrant' in Canada. I'm going to Florida to see my sick mother.

(That's the way all chats go and that usually ends it, but this one went further:)

US: When did you become a landed immigrant.

BW: 1967

US: What's your draft status?

BW: *(Gasp of astonishment followed by laughter -- not recommended at borders)*. It's a long time since anyone ever asked me that question. Didn't you know that Jimmy Carter declared an amnesty in 1976?

US: Sir, I am not implying anything. I do know that there are those who never received an amnesty who are trying to sneak back into the United States.

BW: Well, I'm not a draft dodger. I was just a draft avoider, just like your current president and your former vice-president.

US: Sir, I am not implying anything, but I must ask. You can go.

BW: Thank you. But I wonder, were you involved in the invasion of Grenada?

Bonus question: Which Canadian network analyst (not me) was stopped at the border for many years because of a student trip to Cuba in the 1960s?

The Miami Way: We enjoy Florida sunshine at Sunbelts, but consider this exchange which I heard (9 Sept 94) on a Miami radio station:

Caller: "I'm a Canadian and I want to tell you about our health care system."

Host: "Oh you're one of those disgusting Canadian bitches. How much is your stinking money worth."

It's sad that Neil Rodgers, the WIOD 610 program host uttered those words. Perhaps he felt it was funny. But it's even sadder that I actually heard the exchange when the station management rebroadcast it a while later to show how exciting and provocative they are.

The Toronto Way: Not that all Canadians are saintly. Convicted serial murderer Karla Homolka has written to a friend that the sociology courses she's taking in prison may lead to "too limiting a career path" [*Toronto Sun*, 12 Sept 94]. As Karla has heretofore done her killing one person at a time, perhaps she is contemplating mass murder. For that, she should be a political science major, specializing in statecraft.

The Franco-Canadian Way: A Stratford (Canada) Festival ad [30 July 94] is headlined: "How the French Juggle Relationships. See *Husbands & Cuckolds* by Moliere. Daring deceits & fortuitous misconceptions conspire to unite true lovers."

German Networks: All of us in sociology cut our intro. teeth on the Germanic expressions, *gemeinschaft* and *gesellschaft*, or "Community Saved" and "Community Lost" in my language. But where's the Germanic parallel for the network-based partial communities of today, aka as "Community Liberated". I hereby offer: *netzschafft*.

Family Studies: Families, by definition, are networks, which is why I've always felt the Cttee on Family Research (a quite independent branch of the Int'l Soc Assoc) to be a welcoming place. The CFR has a new president: Barbara Settles, 404 Dorie Dr, Newark DE USA 19713.

Breaking Up: A new book about relationships is Cynthia Heimel, *Get Your Tongue out of my Mouth, I'm Kissing You Good-bye* [Miami Herald, 6 March 94].

Communication Networks: Only 6 months after the famous trial, the Dutch have named the hands-over-genital position that football [soccer] players use to protect themselves against being hurt by a free kick: the "bobbit stance".

Human Relations Area Files are becoming available on CD-ROM. Each annual installment "will cover approximately 15 cultures, including some North American ethnic groups as well as a sample of other cultures around the world." Annual cost: US\$3,900, with LAN/WAN pricing available. Contact HRAF, Yale Station, POB 202054, New Haven CT USA 96520-2054. Phone: +1-800-520-HRAF; fax: +1-203-777-2337; e-mail: hrafsir@yalevm.cis.yale.edu

Cross-Cultural meets Cross-Training: Nike has a TV ad in the U.S. for hiking shoes that was shot in Kenya using Samburu tribesmen. The camera closes in on 1 tribesman who speaks in his native Maa. As he speaks, the Nike slogan, "Just Do It" appears on the screen. Yet Lee Cronk (U Cincinnati Anthro) says the Kenyan is really saying, "I don't want these. Give me big shoes." Nike's spokeswoman Elizabeth Dolan says, "We thought nobody in America would know what he said." [reported in *Forbes Magazine*].

Community Lost, Melody Found: Neil Diamond's favorite place to compose songs is "the NY subway at night -- a couple of drunks, a couple of dead people, and me and my guitar." [*Toronto Star*, 19 Dec 93].

Virtual Community, Melody Resurrected: The 3 surviving Beatles -- Paul, George and Ringo -- reportedly spent 2/94 recording new music in England. In one song, the John Lennon ballad "Free as a Bird," the Beatles will be electronically reunited with John." [*Miami Herald*, 5 March 94]. And I thought that only Natalie Cole was into necrophilia.

I Hit the Sheriff? Bob Marley's son, Rohan, has pleaded not guilty to a charge of trying to hit a Miami Beach police officer with his pickup truck on 4 July 93. Rohan is a junior at U Miami, and also a star linebacker on their football team -- he led the team in tackles last season. [*New York Times*, 26 July 94].

Making the Grade: A colt named "A for Sociology" won the Daryl's Joy Handicap race in Saratoga Springs, NY, 25 July 94, returning \$11.40 for every \$2 bet.

Three-sies and More? University of Chicago Press is publishing, 10/94, *The Social Organization of Sexuality*, by Laumann, Gagnon, Michael & Michaels. Their collaborator, Phil Schumm, writes, "if you are interested in additional info. about the data, please let me know [tel: 312-702-4610; schum@sam.spc.uchicago.edu]." They are going to do a similar study in Chicago, going into the field 3/95. Schumm says, "This study will be interesting from a network point of view because we will be able to use a lot of locally relevant info. (e.g., where respondents & their partners live, where they work & socialize, etc.)"

Aid to India: A group of grad. soc. network analysts in India have no money to buy software & wonder if anyone has an old copy of UCINet, Structure, SPSS or SAS to donate to them. Write: Miss K.S. Malathi, Ph.D. Research Scholar, Dept. of Sociology, Bharathiar University, Coimbatore 641046, Tamil Nadu, India.

Dutch Treat: Frans Stokman (Soc, Groningen) writes, "I really recommend the reading of the book by Bruce Bueno de Mesquita & Lalman on *War & Reason* (Yale U Pr, 1993). It's a really marvelous book, explaining war in a very good way."

S & M Networks? "The road to client/server is paved with networks" is the arousing headline on Digital Equipment Corp.'s ad in *PC Magazine*.

The Comet Explodes by E-Mail: When comet Shoemaker-Levy hit Jupiter 8/94, the astronomy department at the U Maryland used an Internet "exploder" to convey messages among 250 astronomy observation groups &

theorists world-wide. Each observation group contributed their own unique take on the events. Reading all this enabled the theorists to start puzzling over startling observations almost immediately. Similarly astronomers waiting for the dark of sunset in Arizona to make their own observations were able to modify their plans based on info. from those in places (such as the Indian Ocean) where darkness had set in earlier. A few theorists were overwhelmed: "It's like trying to drink from a fire hose," said Donald Yeomans of JPL. "There's too much to digest before the next message comes in." [Richard Kerr, *Science* 265 (29 July 94): 602.

Media Flop: I've noticed a curious thing re media coverage of Carlos, aka "The Jackal." Before he was captured, vast numbers of terrorist acts were attributed to him. This may have protected the authorities from explaining who was really responsible. Now that he's captured, the media is saying that he really wasn't much of a terrorist after all. This may protect the authorities from answering questions about the revelations that Carlos may be making as he's interrogated about the vast numbers of terrorist acts that he allegedly committed. So the lid is kept on -- before and after. [These thoughts occurred to me just after I read John LeCarré's *The Night Manager*.]

I Was a Teenage Network Analyst: The Route from The Bronx to the Information Highway¹

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A totally true account of how I discovered network analysis as a pre-postmodern Bronx teenager and what it has taught me about personal communities, social support, and computer-supported networks of work and community.²

I. MAKING CONNECTIONS

Is Network Analysis Postmodern?

Sometimes I ask myself why I, as a network analyst, should be interested in post-modernism. So much of it is pretentious and empty: bad, untrained ethnography and history masquerading as good social science. Even much of the serious stuff has a different take on society compared to network analysis. Postmodernists deny the possibility of generalizing: everything is a case study. By contrast, network analysis is an inherently generalizing enterprise. We want to tease out the structural patterns that underlie the surface noise of social systems and use our knowledge of these patterns to understand social interaction. It is the old idiographic/nomothetic (particularizing/ generalizing) stuff I learned as an undergraduate history major, or as Charles Tilly (1970) calls it, the contest between "Clio and Minerva". I used to think that it was part of the unendable debate between "art" and "science," but Picasso set me straight on that.³ Here is Picasso talking in the 1940s to his then-partner and afterwards-biographer Françoise Gilot:

¹Keynote Address to the International Social Network Conference held in February, 1994 in New Orleans.

²My talk is dedicated to Charles Tilly who taught me how to look at community, to Harrison White for bringing out the latent networker within me, to Scott Feld and J. Jill Suitor for inviting me to speak, to the more than forty students and colleagues who have collaborated with me, to the Centre for Urban and Community Studies for being a constantly supportive home for twenty-five years, and most of all to Bev Wellman whose thirty-one years of infinite, multistranded support has helped me to grow up without growing old.

³Why should I let Harrison and Cynthia White (1965) corner the network art market?

"Today, we are in the unfortunate position of having no order or canon whereby all artistic production is submitted to rule....As soon as art had lost all links with tradition, and the kind of liberation that came in with Impressionism permitted every painter to do what he wanted to do, painting was finished. When they decided it was the painter's sensations and emotions that mattered, and every man could recreate painting as he understood it from any basis whatever [in other words, no courses in methods or theory-construction], then there was no more painting; there were only individuals....

Painters no longer live within a tradition, and so each one of us must recreate an entire language. Every painter of our times is fully authorized to recreate that language from A to Zed. No criterion can be applied to him *a priori*, since we don't believe in rigid standards any longer. In a certain sense, that's a liberation but at the same time it's an enormous limitation, because when the individuality of the artist begins to express itself, what the artist gains in the way of liberty he loses in the way of order, and when you're no longer able to attach yourself to an order, basically that's very bad" (1964, pp. 74-75).

Picasso's vision of artistic hell is my vision of the purgatory to which mindless postmodernism can lead us. It is the structure-denying route to the kind of unanalytic individualism that does not realize that for every whale you save, a billion plankton die. I feel much more comfortable with Harrison White's statement of belief in structurally constrained individualism, pronounced in 1966 while he was teaching introductory sociology to unsuspecting Harvard undergraduates:

My personal *value* is voluntaristic individualism.... This value becomes a mockery without facing the constraints of social structure. Much better a twig of genuine freedom wrung from a tree of constraint than an artificial tinsel forest of freedom.... Most...social science, especially in the US takes the *view* of voluntaristic individualism: basic reality is in individuals' values and choices, social structure being... epiphenomenal. The fruit of much sociology theory is this deception: social structure must be the sum of individual values so that you can define it *a priori* out of your head. (quoted in Wellman 1988b, p. 34).

Like Harrison White, I take social structure and systematic analysis seriously. Hence I keep wondering if there is any use for postmodernism other than providing job opportunities for social scientists who really want to be English and French majors but are frightened by the lack of job prospects in those disciplines.⁴ Can PoMo be more than a means for incompetents to mystify and get tenure?

Yet there is intriguing substance behind the PoMo smokescreen. In my own field of urban sociology, the postmodernist view of the city (Gottdiener 1991) critiques those who see cities as monolithic and hierarchically organized. This is nicely congruent with the basic network analytic insight that the world is composed of networks, and that hierarchically-organized, bounded groups are only one, somewhat rare, type of a network (Wellman 1988b). Postmodernism and network analysis eschew discussing "the city" or "the community" as if these are clearly defined, bounded entities. Rather, both approaches see communities as loosely-linked relations among people and institutions, where ties often cut across boundaries -- on Granovetterian bridges (1973) -- as stay within them. They see cities as networks of networks

⁴The current vogue for postmodernism in the humanities is also a reversal of the 1960s and 1970s, when some historians and English majors wanted to generalize systematically, just like social scientists.

(Craven and Wellman 1973)⁵ -- links that by connecting small numbers of people also connect larger social entities (see also Breiger 1974).

Network analysts, like postmodernists, state loosely-coupled propositions rather than build grand theories. Our theories are cognitive networks that are analogous to the social networks we study. Indeed, I submit that we all have been postmodernists, properly interpreted, for many years -- just as it took us until high school to realize that we have been writing prose all along. This speech itself is postmodernist. It is not a monolithic argument but a self-referential series of interconnected topics and points.

Teen-Age Networks

I am not sure that I was a teenage postmodernist in the 1950s, but I am sure that I was a teenage network analyst then. Growing up in the Bronx, New York City, I quickly became aware that boundaries were fluid. Most of us have a few defining "A Ha!" moments when the true nature of the universe becomes clear. While Lord Byron used to say he got his best thoughts climbing in and out of bed, my own defining moment was not a Byronic sensual experience, but one of fear. The "Fordham Baldies," the baddest gang in New York, were going to attack our high school, the erudite but defenseless Bronx High School of Science.⁶ The Baldies never showed up to attack us, perhaps because we were armed to defend ourselves with the biggest slide-rules we could find. Yet the incident increased my thinking about gangs, I even hung around with one for a while, the Fordham Flames. I did their homework and they protected me.

It became clear to me in my teens that gangs as corporate entities did not exist. It was impossible to draw up a membership list. Indeed, it was as futile to draw a map cleanly delineating each gang's turf as it is to draw precise ethnic boundaries in eastern Europe (Magosci and Matthews 1993, plate 30). The Bronx consisted of unbounded networks of friends, and friends of friends. When a fight was coming up, groups of friends would call each other and come together to be a gang for that night. On another night, when other friends would call, many of some of the same teens would become members of another gang. Much of organized crime operates in the same way, be it a Colombian or Chinese drug cartel, the Cosa Nostra, or the Moscow mafia.

The Baldies had prepared me for my life's work: showing how communities, cities and societies are organized as networks.⁷ When I arrived at Harvard graduate school, I found that

⁵The information superhighway hype artists are now using the term "network of networks" to sell their product (see the discussion in Wellman and Buxton 1994). I regret that Paul Craven and I did not copyright it in when we first used it in our "Network City" paper (1973).

⁶ Anyone who was in New York in that period should remember the gang. Indeed, Richard Price (1974) wrote a novel in which the Baldies play a central role, later made into a movie (Kaufman 1979).

⁷I think many of us have underlying lifetime projects: I read you Harrison White's before, but think too about Edward Laumann's many ways of using network analysis to comment on Talcott Parsons' ideas about societal integration (e.g., Laumann 1973; Laumann and Pappi 1976; Laumann and

urban sociology was full of silly garbage about the loss of community, the same counter-factual nonsense that politicians are selling today in the United States. I gradually developed from just using network analysis to show that traditional communities continue to exist, to taking advantage of my teenage, Fordham Baldies, insight (Wellman 1993). Communities rarely are tightly-bounded, densely-knit groups of broadly-based ties. Usually they are loosely-bounded, sparsely-knit, ramifying networks of specialized ties. You can trace the development of my thinking by comparing the somewhat traditional orientation of "The Network City" (Craven and Wellman 1973) — where we were using a rudimentary network perspective to say "yes, community ties persist in the traditional sense" — with my "community question" papers (Wellman 1979; Wellman and Leighton 1979). It was in these 1979 papers that I argued that sociologists should find community wherever it exists: in neighborhoods, in family solidarities, or in networks that reach farther out and include many friends and acquaintances.

I had it easy twenty-five years ago although I did not realize it then. Once you stop to think about it, once you start using a network perspective, then it is obvious that communities are networks (just as it is obvious that corporate interlocks are networks). The work is hard, but the concepts are easy. Although we network analysts have often been doing *sheer* documentation — demonstrating the existence of networks — we have not been doing *mere* documentation. We have shifted analysts away from thinking of social structure as nested in little boxes and relationships as being the product of internalized norms.⁸

My sense is that network analysts have come to a cusp. We have done a great job of showing the world that life is full of networks, and we have developed tools such as *UCINET* to make it almost as easy to play with networks as it is for *SPSS* users to play with surveys. My fear is that in sharpening our tools, we can lose sight of the big, important questions. Hence, I will take this time to discuss some of the big questions raised by our group's research into personal communities and social support. I will conclude by sketching our group's new research into computer-supported networks of work and community.

The big story that I have participated in during the past three decades has been to show that large-scale social changes have neither destroyed community nor eliminated social support from kith and kin. The trick has been to conceive of community as an ego-centric network, a "personal community," rather than as a neighborhood. (We can easily use network terms to define membership in a traditional densely-knit, village-like, neighborhood as one form of personal community.) Until now, most research has gone into documenting the composition, structure and supportiveness of these personal communities. Such research is the stuff of science. It is now time build on this research and consider the implications of how personal communities have been transformed.

Knoke 1987).

⁸Recall Agee's (1975) account of how the CIA bribed half the government of Ecuador but kept thinking they were battling for their "hearts and minds."

II. PERSONAL COMMUNITIES IN THE GLOBAL VILLAGE

1. Community ties are narrow, specialized relationships rather than being broadly supportive.

Both scholars and the public have traditionally thought of communities as composed of broadly-based relationships in which each community member felt securely able to obtain a wide variety of help. However, our research group has found in Toronto that most ties are specialized. Active personal community members usually supply only one or two out of five dimensions of social support. For example, those network members who provide small services or emotional aid rarely provide large services, companionship or financial aid (Hall and Wellman 1985; Wellman and Wortley 1989, 1990). By contrast, spouses supply each other with almost all types of social support (Wellman and Wellman 1992).

This means that people must maintain differentiated portfolios of ties to obtain a wide variety of resources (Wellman 1990, 1992b). They can no longer assume that any or all of their relationships will help them, no matter what is the problem. In market terms, they must shop at specialized boutiques for needed resources instead of casually dropping in at a general store. They search for support in relationships which they work hard to maintain. We need to know what are the consequences for people of having such insecure sources of supply.

2. People are not wrapped up in traditional densely-knit, tightly-bounded communities but are floating in sparsely-knit, loosely-bounded, frequently-changing networks.

Scholars and the public have traditionally seen communities as densely-knit solidarities. Such communities tend to have tight boundaries so that relationships largely stay within the communities. Dense knit and tight boundaries make it easy for such communities to control their members and coordinate their behavior, whether this be supplying aid to those in distress or punishing those who transgress.

In reality, personal communities are usually sparsely knit and loosely bounded. For example, the 0.33 density that we have found in the two Toronto studies means that only one-third of a person's active community members have active ties with each other. Moreover, these networks become even more sparsely-knit as people age and their networks get more complex: mean network density declined from 0.33 to 0.13 over a decade (Wellman, et al. forthcoming).

I have started to wonder if there are some basic types of personal communities, albeit more complex than the traditional dichotomy of communal versus contractual organization (Tönnies 1887). Factor and cluster analysis of our data suggests that the basic dimensions of Toronto personal communities are Kinship-Friendship, Range, Intimacy, and Contact (Wellman and Potter 1994). Because there are four dimensions, I nostalgically keep wanting to map them onto Talcott Parsons' system parameters.

The complex and specialized nature of these personal communities means that these are fragmented networks. People must actively maintain each supportive relationship rather than relying on solidary communities to do their maintenance work. The fragmentation, specialization

and low density suggests that tie characteristics may be more important than network characteristics in the provision of social support. We have found that (a) strong ties (socially-close voluntary, multiplex) and bonds between parents and adult children provide high levels of support, (b) accessible ties (living or working nearby, or otherwise in frequent contact) provide many services, and (c) women provide much emotional support, especially to other women (Wellman 1992a; Wellman and Wortley 1989, 1990).⁹ Yet the composition and structure of networks also affect the availability of support, especially the number of non-intimate active ties, network density, and network homogeneity (Wellman and Gulia 1993). Emergent properties are alive and well in Toronto.

Few Torontonians have stable networks. Only 28 percent of their intimate ties were still intimate a decade later. Twelve percent of the once-intimate ties became somewhat weaker over a decade but still continued as active relationships. Twenty-four percent became casual ties, while 36 percent became much weaker or disappeared altogether. Although kinship is more stable, only 34 percent of intimate kinship ties remained intimate a decade later while another 28 percent continued as active, but not intimate, relationships (Wellman, et al. forthcoming).

It is not that people's communities are disintegrating, but that they are in flux. Rather than being locked into one social circle, each person has about 1500 ties that ramify across changing, fragmented communities to connect them to the diverse resources of multiple social arenas (Kochen 1989). Indeed Stanley Milgram's (1967) and Harrison White's (1970) observations that the entire world is linked by paths of five or fewer indirect ties is the basis for a recent play and movie, *Six Degrees of Separation* (Guare 1993). With sparsely-knit, fragmentary, loosely-bounded communities, it is possible to reach many people through even shorter paths. One consequence is that people must actively search their ramifying ties in unbounded networks to deal with their affairs instead of having to depend on the goodwill of a single, bounded community.

3. Communities have moved out of neighborhoods to be dispersed networks. Can dispersed community networks serve the needs of their members?

As well as communities now being fragmentary, sparsely-knit and loosely-bounded, they are no longer local groupings of neighbors and kin. The residents of developed societies usually know few neighbors, and most members of their personal communities live outside of their neighborhoods (Wellman 1990, 1992b). People easily maintain far-flung relationships by telecommunications (with telephones now being supplemented by faxes and electronic mail) and transportation (based on cars, expressways and airplanes). In Toronto, being within an hour's drive or the local telephone zone is more important than being within a neighborhood's walking distance as the boundary for where face-to-face contact and social support start decreasing. A large minority of relationships stretch even farther than the metropolitan area. This lack of local ties and the presence of community members living elsewhere weakens local commitment and encourages people to leave when conditions are bad rather than staying to improve things.

⁹The *American Journal of Sociology* tried to censor the title of Wellman and Wortley (1990), "Different Strokes from Different Folks" because they feared it was obscene.

Even the most spatially liberated person cannot avoid neighbors. Local relationships are necessary for domestic safety, controlling actual land-use, and quickly getting goods and services, as Jane Jacobs (1961) has pointed out for contemporary North America, Vicente Espinoza for impoverished Chileans (1992, forthcoming) and Charles Tilly for pre-industrial Europe (1973). In saying that communities are not as local as they used to be, we need to avoid committing the pastoralist fallacy of thinking our cities and suburbs are inferior to the shepherd-filled villagers of yore (Wellman 1988a). Remember, with shepherds, you also have sheep dung and pervasive social control.

I doubt that pre-industrial communities were as local as tradition has maintained for whenever scholars have looked for non-local ties, they have found far-ranging networks. For example, radioactive analyses of obsidian have found Neolithic spear points and choppers over one thousand miles from their origin (Dixon, Cann and Renfrew 1968). In medieval times, LeRoy Ladurie (1975) used Inquisition data to describe the far-flung relationships of Pyrenean villagers. These shepherds were always moving about, following the flocks or going off to war. Consider too, the protagonist of the *Return of Martin Guerre* (Davis 1983), a soldier returning from distant medieval wars.

I have recently co-authored a paper comparing the communities of twentieth century Toronto and eighteenth century Latvia (Wetherell, Plakans and Wellman 1994). By contrast to the mythical kinship-ridden past, we found that this rural Latvian community did not have enough kin to construct the kinds of social networks that exist today. As these farmers do not appear to have had many friends living beyond the local area, it seems that half the myth was true: Although these groups were local, they only had small clusters of kin at their core. Closer to home, Kenneth Scherzer's (1992) study of mid-19th century New York City is explicitly based on the network models of myself and Claude Fischer (1982). His analysis of wedding guest registers reveals that many of these strong ties came from outside of the neighborhood, often from another state.

4. Private intimacy has replaced public sociability.

Rather than operating out of public neighborhood spaces, contemporary communities usually operate out of private homes. Until recently, men customarily gathered in communal, quasi-public milieus, such as pubs, cafés, parks and village greens. Take for example this description of eighteenth century Paris:

The whole neighborhood overflowed into the street from nearby houses, workshops, shops and taverns. Around every inhabitant a *quartier* took on its shape, made up of daily contacts and changing reputations. Individuals worked round the corner from where they lived. (Roche 1981, p. 246)

More accessible than private homes, such places drew their clientele from fluid networks of regular habitués. Men could drop into such places to talk and to escape domestic boredom. The high density of the city meant that they were likely to find others to talk with. This density, combined with the permeability of the public spaces, provided men with many chance encounters with friends of their friends, and gave them opportunities to form new bonds. Although the men generally went out to enjoy themselves, they also used these public communities to organize politically, to accomplish collective tasks, and to deal with larger

organizations. In colonial New England, "neighbors assumed not only the right but the duty to supervise one another's lives" (Wall 1990). This public community was largely a man's game. For instance, a woman who went alone to a Parisian wine shop risked being mistaken for a prostitute (Roche 1981; Garrioch 1986).

Now community has moved inside, into private homes. The separation of work from residential localities means that co-workers are more apt to commute from different neighborhoods and no longer come home from work in solidary sociable groups. While men now spend more time at home, the feminization of paid work means that women spend less time. Husbands and wives are in no mood to go out together after their weary trip home from work. In any event, foolish zoning regulations in North America ensure that commercial areas are far from home. Domestic pursuits dominate, with husbands and wives spending evenings and weekends together instead of the men going off to pubs and streetcorners (for more details, see Wellman, 1992a). Workaholics bring their computer disks home; couch potatoes rent videos.

Rather than being accessible to others in public places, people now overcome their isolation by getting together in each other's homes or by the private media of the telephone and electronic mail. Most members of Torontonians' personal communities do not live near-by but a median distance of nine miles apart (Wellman, Carrington and Hall 1988). Yet the easy accessibility of local relationships makes them continue to be significant. Although neighbors (living within one mile) comprise only 22 percent of the Torontonians' active ties, these neighbors engage in fully 42 percent of all interactions with active network members (Wellman forthcoming).

Thus the neo-conservative privatization of Western societies, the withering of collective public services for general well-being, is reflected in the movement indoors of community life. Even in Toronto, the safest North American metropolis, 36 percent of the residents feel somewhat unsafe walking alone in their neighborhoods at nights. Yet the usual flight to safety -- driving one's car or staying home and using the telephone or e-mail -- offers little opportunity for enriching, diversifying contact en route. Cars leave garages as sealed units, opened only on reaching the other's home; telephones and modems stay indoors, sustaining only closed duets.

Where North Americans a generation ago often spent Saturday night going out for a movie and pizza, they now invite a few friends over to their homes to watch videos and order a pizza to be delivered. In 1992, the average Canadian household spent \$101 for buying and renting videos compared to \$99 for going to live theatre, concerts and movies. It costs \$3 *per household* to rent a video in Toronto, but \$8 *per person* to go to the movies and about \$30 to attend a play or concert (Film Canada 1990; Strike 1990). This means that people are watching videos at home an average of thirty times per year but are going out for entertainment only three or four times a year. The telephone number for Toronto's largest pizza delivery service, 967-11-11, has become so well known that Canadian immigration officers use it as a test to see if border crossers really are Canadian residents. As my fellow Toronto pundit Marshall McLuhan observed (1973), North Americans go out to be private -- in streets where no one greets each another -- but they stay in to be public -- to meet their friends and relatives.

Public spaces have become residual places to pass through or to shop in. North American church attendance is declining, and Canadian movie attendance has decreased from eighteen

times per year in 1952 to three times per year in 1993. When Torontonians do go out to the movies, most (55 percent) go alone or in pairs (Oh 1991). The public community of the pub in the recent television show, *Cheers*, was appealing because it is so rare. In fact, only 10 percent of adult Canadians go to a pub once a week or more.¹⁰ Suburban shopping malls have become residual agoras -- for consumption purposes only but not for discussion. Their cafes mock the name, deliberately using tiny tables and uncomfortable chairs to discourage lingering sociability. There is little possibility for casual contact or for the expansion of networks. Only in America do such cafes tell their patrons to "have a nice day" and expect them to stay less than a half-hour.

I suggest that as community has become private, people continue to feel responsible for their relatively strong relationships but not for the many acquaintances and strangers with whom they rub shoulders but are not connected. Private contact with familiar friends and relatives has replaced public gregariousness so that people pass each other unsmiling on streets. This privatization may be responsible for the lack of informal help for strangers who are in trouble in public spaces (Latané and Darley 1976). I suspect that one consequence of this privatization of community in a world of strangers is that people feel that they lack friends even when their personal communities are abundantly supportive (see also Lofland 1973).

Network analysis has been better at studying the strong ties of personal, private community than at studying the weak ties and ecological juxtapositions of public community. Network analysts have learned only about strong active ties (Campbell and Lee 1991; Marsden and Campbell 1984) when they ask people to whom they feel close -- as we have done (Wellman 1979, 1982) and as the U.S. General Social Survey more or less did in 1985 (Burt 1984; Marsden 1987) -- or by asking from whom people get various kinds of social support -- as Claude Fischer (1982) and the Dutch have done (Knipscheer and Antonucci 1990). Network analysts have been useful and accurate in saying that strong personal communities continue to exist but have neglected to look at what is happening around these small networks.

5. To what extent have communities become domesticated and feminized?

Home is now the base for relationships that are more voluntary and selective than the public communities of the past. Personal communities now contain high proportions of people who enjoy each other and low proportions of people who are forced to interact with each other because they are juxtaposed in the same neighborhood, kinship group, organization or workplace (Feld 1981). Friends and relatives get together as small sets of singles or couples, but rarely as communal groups (Wellman 1992a). This voluntary selectivity may mean that personal communities have become quite homogeneous networks of people with similar attitudes and life-styles.

Where once-public communities were essentially men's worlds, home-based personal communities bring husbands and wives together. Men's community ties are now tucked away in homes just as women's ties usually have been. Toronto couples operate their networks jointly (Wellman and Wellman 1992), a far different scene from the segregated networks that Elizabeth

¹⁰Special analysis by Scot Wortley of the 1989 Canadian National Alcohol and Other Drug Survey.

Bott (1957) described in the 1950s for England. As community has moved into the home, homes have become less private. Where previous generations had confined friends to ground-floor parlors and dining rooms, friends now roam all floors and rooms.

Not only do women participate in community, they dominate it. Women have historically been the "kinkeepers" of western society: mothers and sisters keeping relatives connected for themselves, their husbands and their children. With the privatization and domestication of community, community-keeping has become an extension of kinkeeping, with both linked to domestic management. No longer do husbands and wives have many separate friendships. As men now usually stay at home during their leisure time, the informal ties of their wives form the basis for relations between married couples. Women define the nature of friendship and help maintain many of their husbands' friendships.

Thus the privatization and domestication of relationships has transformed the nature of community. Because communities interact in private homes, they are more likely to focus on household concerns and they provide less opportunity for casual encounters with friends of friends. Women's ties, which dominate personal communities, provide important support for dealing with domestic work. Community members help with daily hassles and crises, neighbors mind each other's children; sisters and friends provide emotional support for child, husband and elder care. Because women are the community-keepers and are pressed for time caring for homes and doing paid work, men have become even more cut off from male friendship groups (Wellman 1992a). North American men rarely use their community ties to accomplish collective projects of work, politics or leisure. Their relationships have largely become sociable ties, either as part of the relationship between two married couples or as disconnected relations with a few male "buddies".

This domestication helps explain the contemporary intellectual shift to seeing community and friendship as something that women do better than men. Just as husbands and wives are more involved with each other at home, the focus of couples and male friends is on private, domestic relations. Men's community ties have come to be defined as women's have been: relations of emotional support, companionship, and domestic aid. Thus the nature and success of community is now being defined in domestic, women's terms. Concurrently, the growing dominance of the service sector in the economy means that the manipulation of people and ideas has acquired more cultural importance than the industrial and resource-extraction sectors' manipulation of material goods. With 20 percent more managers and professionals than blue-collar workers in Canada (1993), many workplaces share the emphasis on social relationships that women have traditionally practiced at home.

At the same time, the material comfort of most North Americans means that they no longer need to rely on maintaining good relations with community members to get the necessities for material survival. The goods and services that community members exchange are usually matters of convenience, rarely of necessity, and hardly ever of life and death. Community ties have become ends in themselves, to be enjoyed in their own right and used for emotional adjustment in a society that puts a premium on feeling good about oneself and others. This resonates with contemporary feminist celebration of women as being more qualified in the socioemotional skills deemed to be the basis of contemporary communities -- and the downgrading of the allegedly masculine qualities of instrumentalism and materialism.

Contemporary discussions of community often reverse the traditional sexist discourse that has seen women as inadequate men. Now it is men who are seen as unable to sustain meaningful community relationships, especially when such relationships are defined only in terms of socioemotional support. This socioemotional definition has almost totally replaced the traditional definition of community as also including instrumental aid. Patriarchical arguments for male superiority in getting things done are being replaced by the celebration of female superiority in knitting together social networks. As the "feminist author" Maggie Scarf (1987) said on the Oprah Winfrey television show, "Men just don't have friends the way women have friends. Men just don't like to make themselves vulnerable to other men." Clitoris-envy, the alleged longing for empathy among men, has become the new-age replacement for penis-envy among the not-so *Iron Johns* (Bly 1990).

6. *How do personal communities operate within the context of their political, economic and social milieus? How do such milieus affect the composition, structure and functioning of communities?*

Although the assertion that women have greater capacity for community has raised much consciousness, it is an idea that is time bound, culture bound, and empirically unsound. It ignores the thousands of years during which men's bonds largely defined community in public discourse. By reducing the definition of community to socioemotional support, it assumes that the world is as materially comfortable as North American intellectuals.

In less comfortable parts of the world, community members do more for each other than being privately sociable and emotionally supportive. Consider how Eastern Europeans use friends for economic, political and social survival: Greek men argue and plan projects in cafes, and Hungarians help each other build new homes (Sik 1988). Even in more affluent Britain, people value getting services and information from community members as much as they value getting esteem and affection (Argyle 1990). To put matters more broadly, communities do not function in isolation but within the context of political, economic and social milieus that affect their composition, structure and operations.¹¹ The nature of different societies strongly affects the opportunities and insecurities with which individuals and households must deal, the supportive resources they seek, and the ways in which markets, institutions and networks structure access to these resources.

Communities are not just ways in which people spend some of their leisure time but key mechanisms by which people and households get resources. Yet most North American research funding has ignored the broader implications of community ties and looked only at "social support," the effects of community ties on maintaining physical and mental health. Although this is an important matter, it is unfortunate how the availability of money for health-care research has narrowed scholarly attention.

¹¹I am now editing *Networks in the Global Village*, in which authors from several countries demonstrate this.

A broader view would see community as an essential component of society. For example, it is one of five principal ways by which people gain access to resources:¹²

- **Market Exchanges** (as purchases, barter or informal exchanges). Seeing this as the only means of access to resources is in line with the Reaganite belief in the loss of community. [*Liberty*]
- **Institutional Distributions** (by the state or other bureaucracies as citizenship rights, organizational benefits or charitable aid). Such access to resources is in line with those who have traditionally seen society as a moral community writ large, as in the current American debate as to whether health care is a community obligation or a market decision. However, the use of the term "community" to describe such institutional distributions can be a subterfuge for bureaucratic privilege, as was the case in socialist eastern Europe [*Equality*]
- **Community Exchanges**. If such informal, interpersonal access to resources occurs within neighborhood or kinship solidarities, then it fits those who believe in traditional community. If the exchanges are less-bounded (and hence less normatively-enforceable), then it fits the ramified community networks that have been described here. [*Fraternity*]
- **Coercive Appropriations** Direct predatory behavior by interpersonal (robbery) or institutional bullies (expropriation). Current involuntary appropriations usually occurs under the legitimating guise of imbalanced market exchanges or state extractions for unequal institutional distributions (as in governments forcing farmers to sell produce to urbanites at low prices [Tilly 1975]). More extreme instances of the loss of community is common in societies where institutional and communal mechanisms of social control have broken down. [*Robbery*]
- **Self-Provisioning** Making and growing things in one's household. Self-provisioning is used even in market societies (see Pahl's [1984] discussion of growing food in England) and in socialist-institutional ones (see Sik's [1988] discussion of Hungarian home building). Such self-provisioning rests on an infrastructure of market and community exchanges that provide advice, skills and materials. [*Peasantry*]

Although all types of resource access can be found in all societies, market exchanges are especially characteristic of western societies, institutional distributions are characteristic of centrally-planned statist societies, and community exchanges are characteristic of third-world societies with weak states and few formal organizations. While personal communities are important in western, statist and third-world societies, communities are differently composed, structured and used in each type of society. For example, the insecurities of members of western societies largely come from physical and emotional stresses in their personal lives and social relations. Hence people seek support from community members for emotional problems, homemaking chores and domestic crises, and they look to markets and institutions to deal with their economic and political problems.

¹²Note that the French Revolution was fought in the name of three of them.

The comparatively low importance of economic and political concerns in western societies distinguishes the communities in them from those in societies which are less economically or politically secure. Most westerners rely on market exchanges for almost all of their production and much of their consumption. Institutional benefits such as schooling and medical care are abundantly available as citizenship rights. Westerners do not pay as much attention as do the inhabitants of statist societies (such as the former East European socialist states) to having community members who can make and fix things (such as home building) or who have connections to strategic institutional circles. To make another contrast, because westerners rarely have urgent cares about daily survival, they can manage domestic resources with less apprehension than third-worlders living on the margins.

III. THE INFORMATION HIGHWAY IS A SOCIAL NETWORK

"The Network City" (Craven and Wellman 1973) begat *The Network Nation* (Hiltz and Turoff 1978), the first book about virtual communities. It is a direct progression to go from talking about personal communities -- linked by phones, planes and cars -- to talking about virtual communities, linked by such computer-supported means of communication as electronic mail and videoconferencing. Thus our group is now investigating the nature of virtual communities and virtual workgroups (Mantei, et al. 1991; Wellman, et al. 1994b).

The media are filled with excitement over the promise of computer-based "information superhighways," although much of the hype is an all-out effort by the telephone and cable companies to get the taxpayer to pay for the immense cost of putting fiber optic cables into every home and office (Wellman and Buxton 1994). To give you an example of the gap between promise and reality, I recently sent an e-mail message to U.S. Vice President Albert Gore, a leading champion of the information highway, asking him to cancel the free trade deal and return Canada to its residents. I received a reply in 20 seconds, telling me that my "correspondence has been read carefully" and thanking me for my "continued support... and participation in our democratic system of government." It was a self-negating message!

Despite the loathsome hype, computer-supported communication will affect work and community. We are finding my "Community Saved - Community Liberated" typology (Wellman 1979; Wellman and Leighton 1979) to be useful for analyzing virtual workgroups and communities that are linked through computer-supported communication. The Saved type is similar to the experiences of workers in a tightly-bounded, densely-knit open-office fishbowl, often on a single, common project. The Liberated type is similar to the experiences of workers who tend to operate more independently as they work simultaneously on a variety of projects. They work in loosely-bounded, sparsely-knit, multiple, fragmented networks, switching among a diversified set of relationships to accomplish their tasks. Quite different computer interfaces are needed to support Saved and Liberated styles of work (Wellman 1994).

We need to share more than just typologies between studies of work and community. Computer-supported communication has the potential to reconnect work and community by bringing skilled workers back home as "teleworkers" and by linking like-minded colleagues without regard to distance. But telework affects connectivity in complex ways. We have found that some teleworkers value the social isolation that working at home gives them, buffering their

communications with voicemail, closed-door videoconferencing, and asynchronous e-mail (Salaff, et al. 1994; Wellman, et al. 1994a) With computer-supported communication, an electronic network becomes a social network, and a community sustained by such media becomes a virtual community. We must teach computer scientists and policy makers that a computer network is a communication network is a social network.¹³

Social network analysis is a useful approach to understanding how computer-supported communication affects the organization of work. We are looking at how different types of relationships operate over computer-supported communication networks (e-mail, videoconferencing, et al.) and what kinds of communication media are used for what types of ties. For example, a set of computer scientists whom we have studied rely heavily on e-mail to exchange emotional support, presumably because they are usually at their terminals and because e-mail avoids close physical contact (Haythornthwaite, Wellman and Mantei 1995; Garton and Wellman 1995).

One of our studies is comparing two organizations that rely heavily on computer-supported communication. In one organization, "Indigo," two existing offices that are 100 kilometers apart have been linked by desktop videoconferencing and enhanced electronic mail. In the other organization, "Blue," some white-collar employees have moved home to be connected to their firm by a wide variety of computer-supported communication media. At the stay-in-place "Indigo" organization, although there has been some increased connectivity between the two offices, workers have learned how to preserve their autonomy and use the new technology for the unanticipated purpose of socializing. The teleworking "Blue" employees are much more heavily involved with their new technology -- as they would be unproductively isolated at home without it -- but they use it to protect themselves from unwanted intrusions as well as to communicate with others (Salaff, et al. 1994; Wellman, et al. 1994a).

We have been struck by how much the home-based teleworkers remain integrated into the Blue organization. Management by matrix, in which people report to several others, is a common organizational alternative to the traditional tree hierarchies of bounded workgroups. Yet simple two-dimensional matrices do not adequately represent work organization in this large high-tech firm. In Blue, white-collar workers constantly report to, relate to, and supervise shifting sets of multiple others. The firm has implemented what we call "management by network" in which computer-supported communication networks organize much of their work. Consequently, Blue can afford to encourage workers to move home to become teleworkers for they will continue to be enmeshed in the same communication *cum* control networks (Salaff, et al. 1994; Wellman, et al. 1994a).

What about community? Will teleworking further privatize community and lead to renegotiated marital roles, as paid work gets done around the home? Will the loss of community increase? With teleworking and teleshopping, there is even less reason to leave home and mingle with neighbors or the public. Computer-supported communication will help many ties to remain active over long distances. The effect on weaker ties may be more complex. It is probable that there will be less of the weak-tie physical contact that has integrated the social fabric. Yet weak

¹³With apologies to Gertrude Stein.

ties who live far apart but rarely communicate could more easily stay in contact. At the same time, teleworking spouses will see even more of each other around the home. Although men have done few domestic chores until now, teleworking may lead to new domestic divisions of labor. Doing the laundry may become a rest stop on the information superhighway.

EXPERIENCING NETWORKS

Clearly, connections are (almost) everything. But the audience is sitting in rows, stiff as isolates. It is one thing to analyze networks. It is another to experience it, to feel what it is like to be a member of a network with your whole body and soul. To help us move from analysis to action, Bev Wellman and the (Toronto) Ties and Bonds dancers have devised a whole-body network dance experience for all of us! Let's move!

*At which point, revelry filled the hall as social networks were experienced rather than analyzed.*¹⁴

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¹⁴*Publisher's note:* Some people escaped out the back.

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Displaying Hierarchical Clusters

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1. Introduction

Visual images are widely used in reporting the results of scientific research (Koestler, 1964; Arnheim, 1970; Taylor, 1971; Tukey, 1972; Klov Dahl, 1981). In recognition of that fact, scientists often devote a good deal of effort to the development of visual devices for the display of their models and their observations.

The display of the results of hierarchical clustering is a case in point. Proposals for displaying hierarchical clusters as trees, dendograms, castles, skylines, loops, icicles and shaded matrices have been made (Ward, 1963; Wirth *et al.* 1966, Bertin, 1967; Johnson, 1967; McCammon, 1968; Ling, 1973; Shepard, 1974; Hartigan, 1975; Engelman, 1977; Kleiner and Hartigan 1981; Kruskal and Landwehr, 1983).

Each of these proposed modes of display was developed to facilitate some particular goal. Some are simple to program on a computer. Some can be produced on a conventional line printer and require no special equipment. And some are designed to be easy to interpret; they make it possible to see at a glance which objects join which clusters at what level.

None of these standard modes of display, however, is entirely satisfactory. All but one are guilty of violating Tufte's (1983, p. 87) rule that graphics should not "miss the real news in the data." And the one that is designed to present the news--the shaded matrix--is a good example of what Tufte (1983, p. 15) called a "visual puzzle" or a "crypto-graphical mystery."

This note will propose a way of taking advantage of the power of micro computers to display the results of clustering. Such micro computer displays can provide more information than traditionally has been possible. They can make it simple to see the overall structure of the clusters and they can reveal the details of the correspondence between the data and the clustering model.

2. Clusters and Displays

Hierarchical clustering is a collection of procedures for organizing objects into a nested sequence of partitions on the basis of data on the proximities (or distances) among the objects. Strictly speaking, objects can be clustered if and only if their proximities are ultrametric. But since observed proximity data are seldom if ever strictly ultrametric, the goal of hierarchical cluster analysis is to find a collection of ultrametric proximities that are reasonably close to the observations.

A great many methods for clustering actual data have been proposed (Ward, 1963; Hartigan, 1967; Johnson, 1967; McWhitty, 1967; Lance and Williams, 1967; Gower, 1967; Sibson, 1970; Sneath and Sokal, 1973; D'Andrade, 1978; Weller and Buchholtz, 1986). They all use one or another algorithm to find an ultrametric that approximates the observed data.

		Woman																	
		1 1 1 1 1 1 1 1 1																	
		1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1	8	6	7	6	3	4	3	3	3	2	2	2	2	2	1	2	1	1
	2	6	7	6	6	3	4	4	2	3	2	1	1	2	2	2	1	0	0
	3	7	6	8	6	4	4	4	3	4	3	2	2	3	3	2	2	1	1
	4	6	6	6	7	4	4	4	2	3	2	1	1	2	2	2	1	0	0
	5	3	3	4	4	4	2	2	0	2	1	0	0	1	1	1	0	0	0
	6	4	4	4	4	2	4	3	2	2	1	1	1	1	1	1	1	0	0
	7	3	4	4	4	2	3	4	2	3	2	1	1	2	2	2	1	0	0
	8	3	2	3	2	0	2	2	3	2	2	2	2	2	2	1	2	1	1
Woman	9	3	3	4	3	2	2	3	2	4	3	2	2	3	2	2	2	1	1
	10	2	2	3	2	1	1	2	2	3	4	3	3	4	3	3	2	1	1
	11	2	1	2	1	0	1	1	2	2	3	4	4	4	3	3	2	1	1
	12	2	1	2	1	0	1	1	2	2	3	4	6	6	5	3	2	1	1
	13	2	2	3	2	1	1	2	2	3	4	4	6	7	6	4	2	1	1
	14	2	2	3	2	1	1	2	2	2	3	3	5	6	8	4	1	2	2
	15	1	2	2	2	1	1	2	1	2	3	3	3	4	4	5	1	1	1
	16	2	1	2	1	0	1	1	2	2	2	2	2	2	1	1	2	1	1
	17	1	0	1	0	0	0	0	1	1	1	1	1	1	2	1	1	2	2
	18	1	0	1	0	0	0	0	1	1	1	1	1	1	2	1	1	2	2

Table 1. Co-attendance at 14 Social Events by 18 Southern Women

When an analyst fits an ultrametric model to proximity data, what is typically displayed is simply the sequence of partitions produced by the data. To illustrate this point, consider the data on co-attendance by Southern women at a series of social events as reported by Davis, Gardner and Gardner (1941). The data are shown in Table 1. Figure 1 shows four common forms for the display of the results of hierarchical clustering based on average proximity. From any of these displays we can see that two of women (1 and 3) cluster most closely. They are followed by the four others (2 and 4 join with 1 and 3, and 12 and 13 join together). Then woman 14 joins the 12, 13 cluster, and so on until at the lowest level all the women are lumped together.

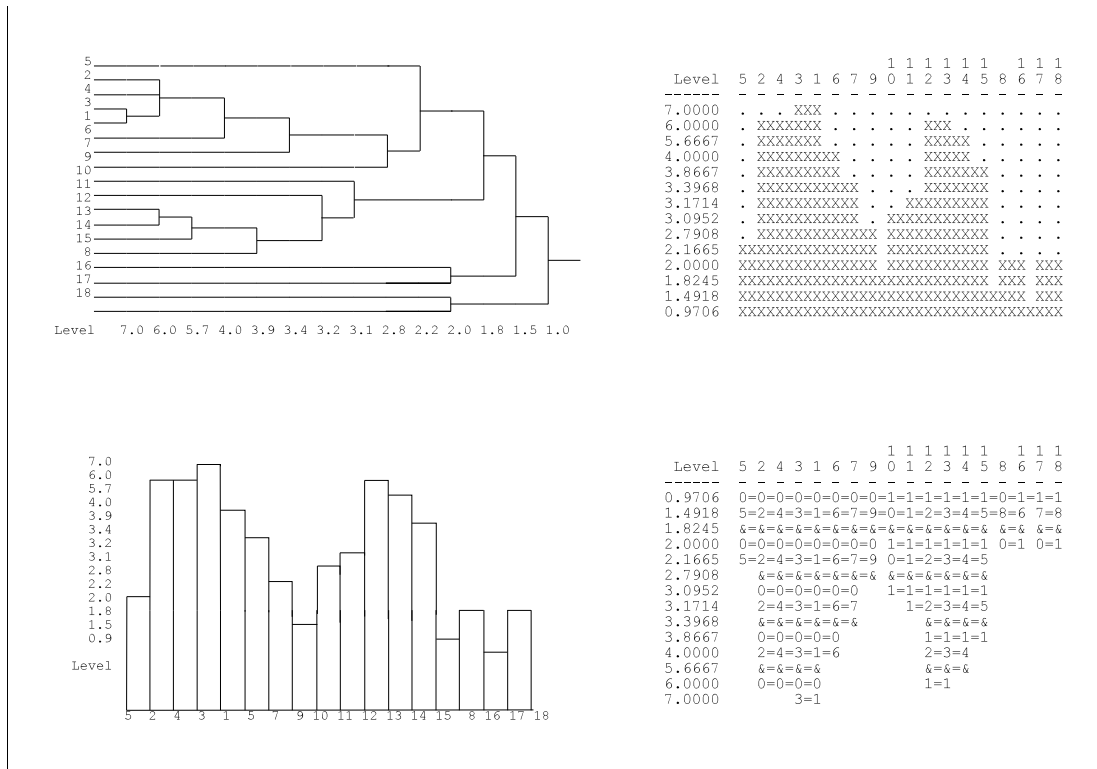


Figure 1. The clustering of the Southern Women data of Table 1 shown in four standard forms of graphic display.

But these standard modes of display reveal only the idealized cluster structure produced by the model; they provide a nested sequence of partitions. They order the women according to the clustering algorithm and show the level at which each set of clusters is merged. But they reveal absolutely nothing about the degree to which these idealized ultrametric proximities correspond to the observed proximities linking the women.

The situation is as if, when fitting a set of observed data points to an idealized curve, we displayed only the curve and suppressed all information that might show how closely the observations fit that curve. A good deal more important information is communicated when the curve is displayed along with the scatter of the points that it is intended to represent.

Ling (1973) recognized that this was a problem in displaying the results of cluster analysis. He adapted Sneath's (1957) shaded matrix as a way to show both the observed data and the idealized partitioning simultaneously. Essentially, Ling's proposal was to take half of a symmetric data matrix of proximities and to rearrange its rows and columns in terms of the order dictated by the clustering algorithm. Then a visual display is created by printing the cells representing close proximities using dark symbols and those that are more distant using lighter symbols. The Southern women example is shown in Figure 2.

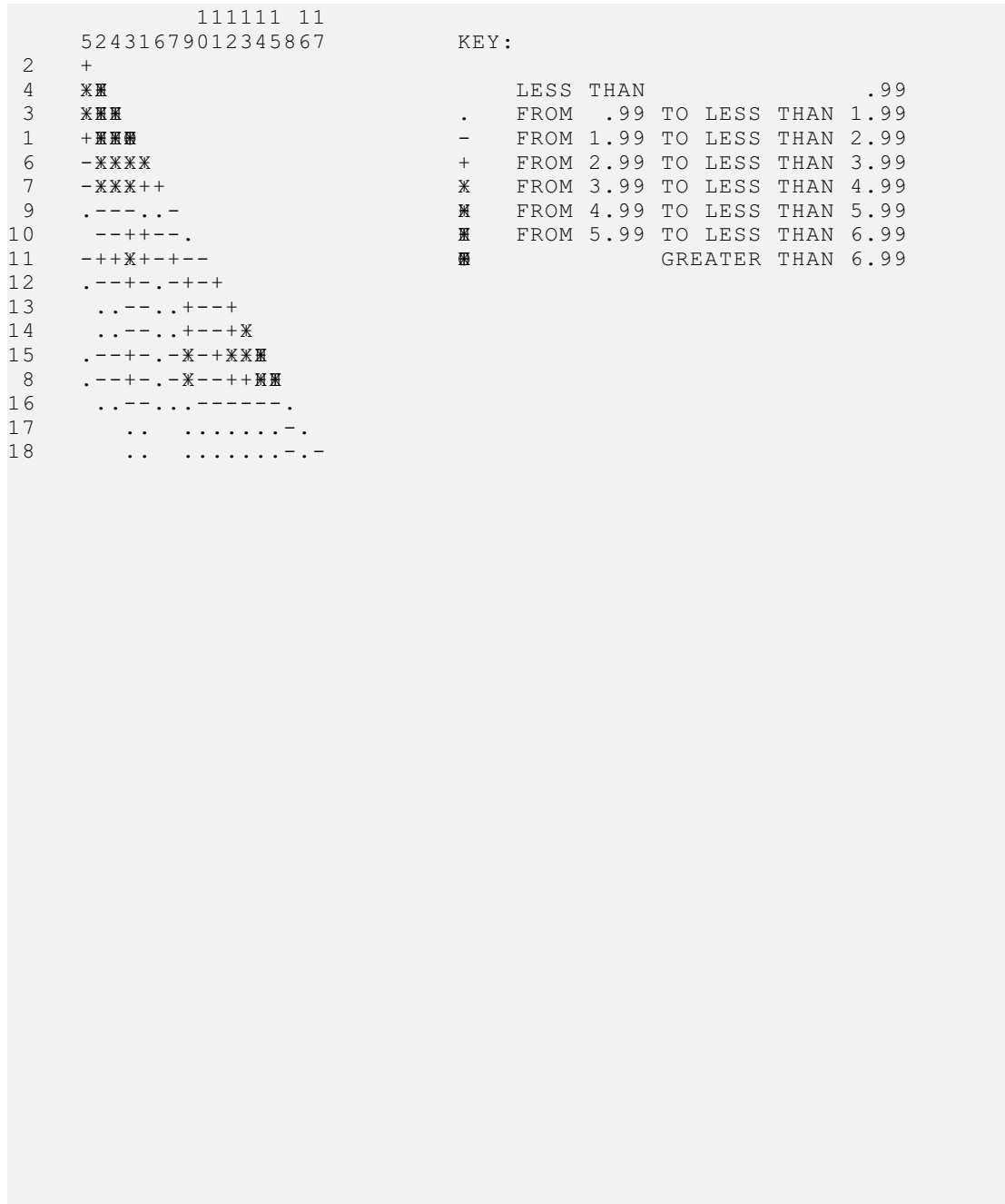


Figure 2. The clustering of the Southern Women data shown in shaded form.

As compared with other display forms, the shaded matrix makes a genuine attempt to provide the needed information on fit. It displays not only the idealized structure, but, by its arrangement of dense and light symbols, it tries to show how well the original data correspond to the model. In most cases, however, shaded matrices simply fail to do the job. They are both crude and difficult to interpret. Differences in the density of symbols cannot capture the full range of variation in most data sets. And, since the reader must constantly refer to the symbol

key, it is difficult to "see" the fit displayed in these tables. Although they are included as options in both BMDP and SYSTAT, shaded matrices are not often used to report research results.

3. Shaded Density Plots

The overstrikes shown in Figure 2 were all we could do in an era when printing was performed by a daisy wheel or a line printer chain. Printing then was limited to the use of typescript characters. But modern printers typically use dot matrices, lasers or ink jets and they are able to produce a wide range of uniform shadings. Shaded density plots simply substitute a full range of gray shades for the awkward and confusing overstrikes of the shaded matrix. Clearly, it is much easier to see differences in gray densities than to decode differences in the densities of overstruck typescript symbols.

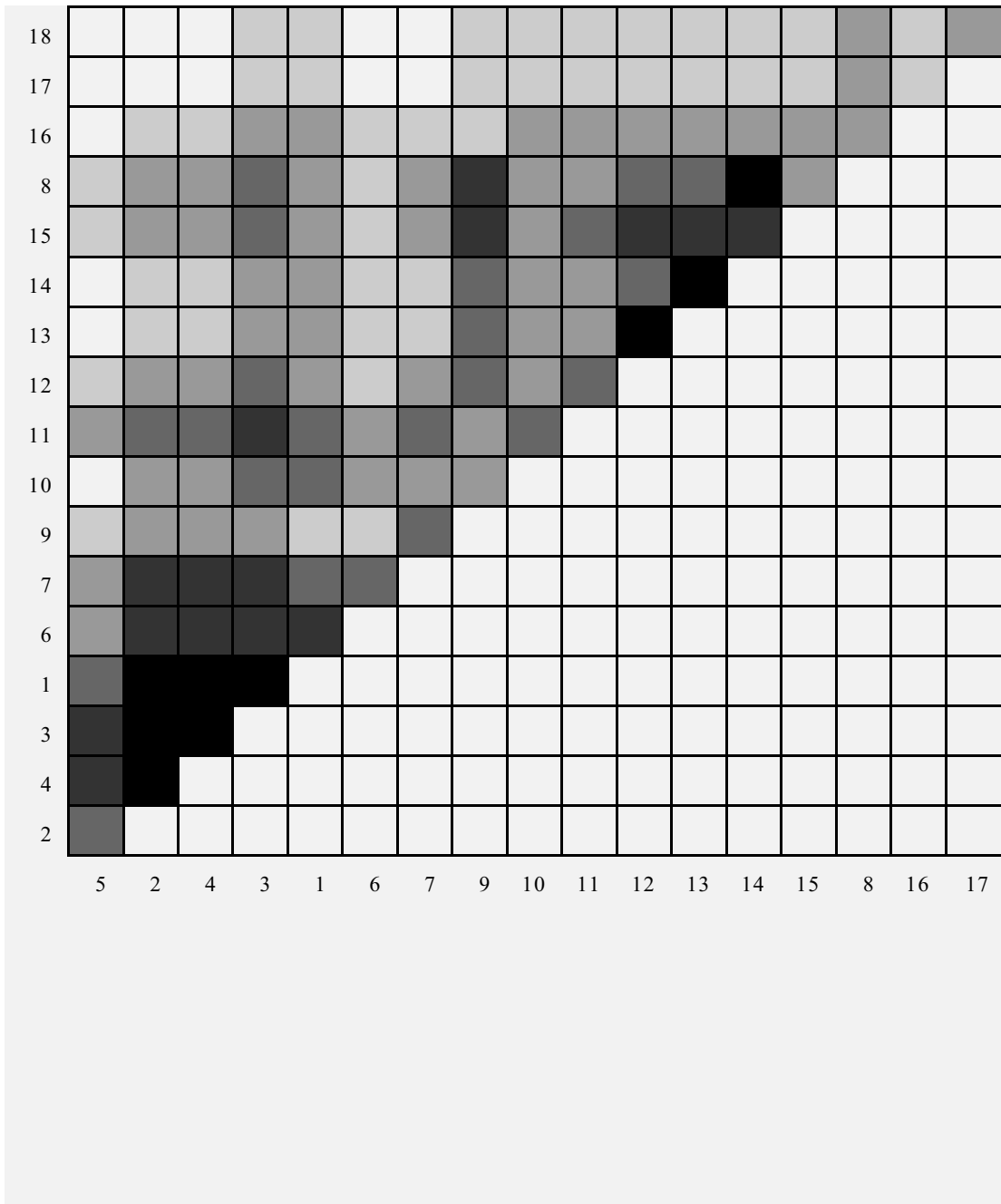


Figure 3. The clustering of the Southern Women data shown as a shaded density plot.

Consider Figure 3. It shows a shaded density plot representing the Southern women's proximities. It reveals the basic pattern of clusters along the diagonal. And, at the same time, it also captures the departures from ultrametric form that were present in the original data. When the entries in a proximity matrix are ultrametric they produce a pattern of smooth steps, peaking at the diagonal. Departures from strictly ultrametric proximities are apparent as

irregularities--dark and light spots--in the smooth appearance of the plot. Figure 4 shows what the proximities would have looked like if they had been exactly ultrametric.

A shaded density plot, then, provides an alternate way of presenting the information contained in a shaded matrix. But it is clear that in a density plot the information is both easier to decipher and provides greater detail about departures of the data from the ultrametric form. All in all, shaded density plots have the advantages of shaded matrix displays without having their limitations.

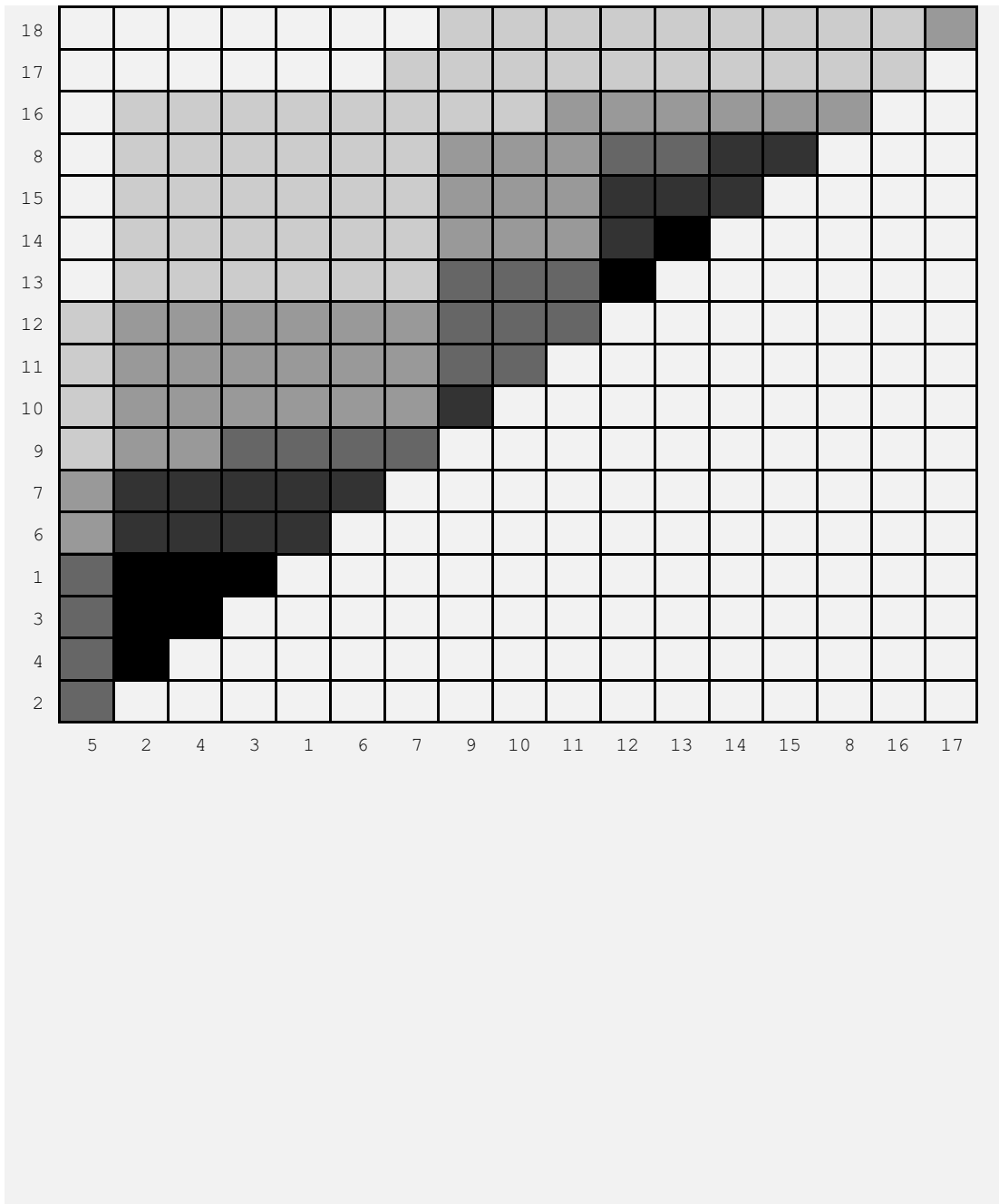


Figure 4. The clustering of the Southern Women data as they would appear if their proximities were exactly ultrametric.

Obviously these shaded density plots cannot be produced on traditional mainframe line printers, but given the ready availability of laser printers and ink jets that is no longer a problem. A great many graphic programs are available, and almost any home computer can generate graphic images. Images like those shown in Figures 3 and 4 clearly contain a great deal more

information about the ultrametric model and its fit to the data than was possible with earlier equipment.¹

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¹Figures 3 and 4 were produced using the standard graphics in the MATHEMATICA system.

KrackPlot 3.0: An Improved Network Drawing Program

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1. Introduction

A new version of KrackPlot, graph layout software for social networks, has recently been completed. The new version is written in C++ and will run on a PC with 386 chip or better.

2. New features in KrackPlot 3.0

KrackPlot 3.0 contains a number of new features and improvements over previous versions of the software. It can:

- Use a mouse to: create and delete nodes, move individual nodes or groups of nodes, and create or delete lines
- Scroll over large graphs and zoom in on a smaller subset of a graph
- Display node attributes visually
- Calculate Krackhardt's (1994) graph theoretical dimensions of informal organizations

Important note: some features require a mouse.

2.1 Displaying node attributes with color and shape

KrackPlot 3.0 allows the user to display a node's attribute using colors and/or shapes. With a click of the mouse, the user can display in a small window information about the node such as gender, departmental affiliation or any other characteristic.

Mitchell (1994) used data from the Manchester Homeless Women study to demonstrate the utility of circular network diagrams to communicate the results of social network studies. We use the same data to communicate the advantages of KrackPlot 3.0. Figures 1 and 2 use colors to differentiate four categories of people: the respondent, the respondent's family, her husband's family and the residents of the shelter. This allows us to see the patterns of relationships within

and between the groups very clearly. The particular shapes and colors assigned to different types are fully under user control.

2.2 Better layouts through simulated annealing

The insights that can be gained from inspection of sociograms are heavily dependent on the way they are drawn. This can be seen from the two different layouts of Mitchell's data. In the second, drawn by simulated annealing, the different groups are clearly separated and the centrality of the respondent can be seen. Simulated annealing is a combinatorial optimization strategy pioneered by Metropolis et al (1953), who used it to "solve" the traveling salesman problem. Simulated annealing was used for laying out graphs by Davidson and Harel (1989) and Chung and Borgatti (1994), and we have found the technique to be relatively successful at drawing sociograms. KrackPlot 3.0 also permits the user to change the parameters of the simulated annealing function.

2.3 Graph theoretical dimensions of informal organizations

KrackPlot 3.0 calculates four dimensions of informal organizations that are described in Krackhardt (1994a; 1994b). Each of the four dimensions measures an independent feature of overall structure on a 0 to 1 scale. When all four dimensions are equal to 1, they constitute a necessary and sufficient set of conditions for the existence of an outtree (such as observed in a traditional formal organizational chart). These four dimensions together comprise a CoSHiR model of informal organizations and are defined as follows:

- 1) **Common Deferent**: the extent to which every pair of points in each weak component has a common deferent (or "upper bound" in graph theory).
- 2) **Sparseness**: the extent to which each weak component has only the N-1 lines necessary to keep it weakly connected (called "graph efficiency" in Krackhardt, 1994a).
- 3) **Hierarchy**: the extent to which the transitive closure of the digraph lacks symmetric ties.
- 4) **Reachability**: the extent to which every pair of points is mutually reachable in the underlying graph.

2.4 Other features

KrackPlot 3.0 has a menu-driven interface coupled with a large set of hot-keys, making it easy to load data files, save files, create printer files, and toggle arrowheads on and off. All the colors used to distinguish nodes, lines, background and menus can be altered within KrackPlot 3.0. KrackPlot 3.0 can also display small adjacency matrices in a manner similar to that suggested by George and Allen (1993).

KrackPlot 3.0 will also optionally draw loops from a node to itself to represent reflexive ties.

KrackPlot 3.0 is compatible with UCINET IV (Borgatti, Everett and Freeman 1992) and with KrackPlot 2.0. Moreover, files can be read into and saved from KrackPlot 3.0 in one of two formats: (a) the format used in KrackPlot 2.0, and (b) a linked-list format suggested by Eades and Kelly (1987), which allows files to be input directly into Mathematica and Combinatorica.

KrackPlot 3.0 produces PostScript files, understood by a wide variety of printers, and can also generate color PostScript output. A free software package called Ghostscript is available that can convert postscript files to files that can be printed on almost any printer, including laserjet, inkjet and dot matrix printers.

2.4 Availability

To obtain KrackPlot 3.0, contact Analytic Technologies, 6616 Christie Rd., Columbia, SC 29209. Tel. (803) 783-0603. Fax (803) 783-1416. The price is \$50 for academics, \$200 for corporate purchasers, and \$25 for students. Owners of KrackPlot 2.0 are entitled to a \$20 discount. KrackPlot 3.0 is available as of December 1, 1994.

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A Procedure for Assessing Large Scale 'Total' Networks Using Information from Key Informants: A Research Note^a

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The collection of empirical network data on large scale networks is often hampered by research-technical restrictions. Therefore it is sometimes better to interview key informants on the existence of relations in the set of actors under study. In this research note a procedure is presented that enables the measurement of large scale networks in a way that is not too time consuming and yet relatively valid and clear for the respondent.

Network analysis is an advanced and powerful tool for analyzing the social structure of collectivities, such as working groups, football teams, school classes, or organized interests in a policy domain. The relations between members of such collectivities are used to explain social phenomena. However, empirical data must be collected about the existing relations between the members (individuals or organizations) before the structure of the network can be so neatly analyzed. The practice of collecting empirical network data is sometimes hampered by restrictions in the field, or by the specific research question. One restriction is the accessibility of the social phenomena under study. Political networks for example are accessible only with difficulty, and the people involved are not always willing to be frank and open. A second, related, restriction involves the validity of the responses when measuring actual existing networks. Strategic responses are more than likely when assessing political networks, and social desirability will play a role when measuring friendship networks. A third important restriction is time and money. Especially when networks under study is relatively large, or when a number of networks have to be assessed, lots of money and time need to be invested.

For those cases the use of a *key informant* may be a solution for getting access, creating a more 'objective' view on the subject, and saving time and money (c.f. Burt, 1983; Berveling & Van Roozendaal, 1991). The respondent is not necessarily (or sometimes even preferably) a

^aThis article originated from methodological aspects of a broader research into developing theoretical models for analyzing the relationship between preference structures, policy networks and policy implementation. This research was sponsored by the Foundation for Law and Public Administration (Reob), which is part of the Dutch Organization for Scientific Research (NWO), grant 415-22-020. The development of this procedure benefitted from stimulating discussions with Jim Allen, Ron Burt, Jooske van Busschbach, Andreas Flache, Shaul Gabbay, Rob Mokken and Frans Stokman. Correspondence address: René Torenvlied, University of Groningen, Interuniversity Center for Social science theory and methodology (ICS); Grote Rozenstraat 31; 9712 TG; Groningen; The Netherlands. (e-mail: r.torenvlied@ppsw.rug.nl).

member of the network. She can be the policy domain specialist, the class teacher, the supervisor of the team or another well informed observer. Using only one or a limited number of respondents also has some drawbacks, especially when assessing networks in relatively large groups. Interviews may take very long and the respondent may lose focus on the task.

In this research note a procedure is presented to measure the social network in a large group (or other type of collectivity), with the help of a key informant. The procedure makes it as easy and understandable as possible for the key informant to evaluate the many possible relations in the group. In this way, the procedure is not too time consuming and yet relatively valid.

Social network analysis focusses at the set of relations between social actors (individuals, organizations or institutions) of a specific group. These relations can be absent, undirected or directed. We will call such a set of actors and their relations a *total network*, in contrast to individual networks that comprise the relations of one single actor.

Problems with data collection on total networks arise when there is a large number of actors in the set and thereby potentially a large number of relations in the set. If we take one type of relation (e.g. friendship, support or influence) and exclude relations to oneself (loops) the inclusion of n actors in a set leads to maximally n^2-n directed relations between these actors. In total networks, the number of actors can be rather large. Policy influence networks for example, realistically can include more than fifty actors, implying the existence of 2450 potential directed relations. As each potential relation has to be evaluated by the key informant in order to detect its existence, increasing n rapidly becomes a severe impediment for network data measurement.

The regular approach to assessing networks, using *name generators*, does not have such a disadvantage (Burt, 1989). A respondent is asked to name a number of people with whom she has a specific relation. Subsequently, the people she mentioned can be traced down, interviewed, and likewise the procedure snowballs further into the network. For the purpose of measuring large scale total networks, these name generators however have two important drawbacks: (1) The maximal number of potential directed relations to be found in the network is dependent upon the number of alters mentioned, and (2) the network is ego-centered and limited to direct relations because a respondent only has the option to provide information about her direct relations. The total network that results resembles a collection of personal 'stars'. The second drawback is sometimes addressed by extending the name generator to include indirect relations.^b The first drawback is more difficult to overcome. The researcher has no control over the alters that are generated. When his research problem explicitly concerns a well defined set of actors, name generators can only be used if they are provided to all actors in this set.

The usual way to assess a total network by the aid of one respondent is to confront her with a blank *matrix*. Each directed relation between two actors is represented by a cell. For each

^bIn the questionnaire, the respondent is asked to indicate which relations exist among her alters. She is confronted with an empty matrix, has to write down her alters, and subsequently is asked to indicate which relations of all possible combinations of her alters exist according to her perception. For small numbers of alters, this can be done relatively straightforwardly. For larger numbers, this procedure is less suited, as we will see later on.

cell, the respondent can indicate the relative strength of the (directed) relation with a number between zero or one. This procedure only has one advantage: its simplicity for the researcher. The matrix—as input format for network analyses—can be used directly. However, this procedure has two severe drawbacks which impede a valid use and practical applicability. First, it may very likely not lead to valid inferences. In practice, respondents experience large matrices as being very fuzzy 'things'. They are easily confused when they are asked to indicate direction in relations, using a large matrix. A cell combining two actors i and j below the diagonal represents i having a directed relation towards j . A cell combining actors i and j above the diagonal represents j having a directed relation towards i . When the set of actors is relatively small, the overall picture of the matrix is clear enough to make distinctions possible between the different cells above and below the diagonal. Large matrices are disastrous: they cause the respondent to be very error prone in finding the right cell for each directed relation in the matrix. Second, filling in the complete matrix of a large network is time consuming. On average, our experience using this procedure is that it takes a policy domain specialist about two hours to present a more or less complete and valid picture of a policy network of 40 actors.

As existing instruments to measure large scale networks can only be applied with difficulty, we developed a measurement procedure^c that overcomes some of the problems mentioned above. We realized that the core of assessing relations between actors in a total network lies in a pairwise comparison of the actors. If we can frame the procedure for making comparisons to be relatively straightforward, the respondent's understanding will increase and the time spent will be reduced.

We proceed in three steps. The first step is to divide the set of actors into smaller sub-groups. These sub-groups can have a certain meaningfulness, for example: Actors in a policy domain can be classified as ministers, legislation, administrative agencies, non profit organizations, and interest groups. Subsequently all possible pairs of groups are presented; in a small booklet, with one sub-group at the left side and one sub-group at the right side of each page. Then, comparisons are made between the actors of the two sub-groups. *Within* sub-group relations are assessed by comparing a sub-group with itself; *between* sub-group relations are assessed by comparing different sub-groups. When a set of 36 actors is divided in 6 sub-groups, there are 6 within-group comparisons and 15 between group comparisons.^d Instead of having the respondent evaluate 1406 combinations of actors on one big sheet, she can do so in 21 rounds.

The second step is to make it easier for the respondent to specify the direction of relations. For each combination of actors we introduce four response categories: (a) There is no relation between the two actors (b) One actor has a relation towards the other actor (c) The other actor

^cWe called this instrument NETwork QUESTionnaire, shortly 'Netquest'. It is being applied in research projects on local policy making (ICS Groningen), national educational policy making (ICS Decision Insights, commissioned by the Dutch Ministry of Education and Sciences), European policy making (ICS Groningen).

^dThe total number of group comparisons, including the within and between group comparisons is $\frac{1}{2} n (n+1)$. This is also the number of pages needed in a booklet presentation.

has a relation towards the one actor, and (d) both actors have a relation towards each other. Consequently we only need half of the matrix.

<i>page L1</i>		<i>page R1</i>
	A	B
Mayor	●	● Social Services Department
Alderman Financial Affairs	●	● Police
Alderman Public Green	●	● Welfare Association
Alderman Social Affairs	●	● Elderly Association
Alderman Infrastructure	●	● Housing Foundation ● Housing Association
 <i>Ready? Turn to page: R2</i>		
<i>Response categories:</i>		
A B	A and B do <u>not</u> take each other's opinion into account	
A → B	B takes into account the opinion of A	
A ← B	A takes into account the opinion of B	
A ↔ B	A and B take each other's opinion into account	

Figure 1. Example of a booklet page.

The third step is to visualize the assignment of a relation, in order to speed up the procedure. This is achieved by asking the respondent to draw an arrow between dots that represent the actors. This arrow can be directed (in two ways), undirected or absent, as figure 1 shows. The

advantage of drawing arrows is that it translates three evaluations into one quick action: (a) "Does there exist a relation between actor i and actor j ?" (b) "If so, is the relation directed or not?" (c) "If the relation is directed, what is the precise direction of the relation?".

The last step is to present the questionnaire in a neat and efficient booklet. This speeds up interviewing and increases understanding. In figure 1 the presentation of one page of the booklet is shown, in a policy network example: The social policy domain in a municipality. In this example, group 'A' comprises the mayor and aldermen, and group 'B' comprises relevant social organizations and city departments. The total number of organizations in the set is, much larger. When the sub-groups consist of a relatively large number of actors, a criss-cross pattern of arrows may evolve between the sub-groups. A way to solve this problem is to ask the respondent for the specific pattern in relations among the actors. For example, when some actors have a mutual relation with *all* other actors, this can be noted without having to draw all the arrows.

As Table 1 shows, experiences with this procedure are rather positive. It has been successfully applied on policy domains consisting of about 40-50 actors. The sets of actors were divided in six sub-groups. The policy domain specialist interviews on the policy network now only take thirty minutes for about 35 actors, whereas they formerly took more than two hours. Furthermore, we found that the level of comprehension about the procedure by the specialists increased. Questions for clarifying the procedure that we were formerly experienced, now disappeared. The new procedure therefore may offer quite an acceptable tool for the researcher who needs to assess large scale networks with the help of only a limited number of respondents.

Table 1. Interview Duration for the Influence Networks in Five Different Policy Networks

Policy network	N	Duration ¹	
		Matrix	Netquest
Infrastructure development Amsterdam	48	180 ²	n.a. ³
Social renewal Weststellingwerf	34	120	30
Administrative reform Groningen	31	n.a.	25
Administrative reform Arnhem	34	n.a.	30
Reorganization special education	39	n.a.	35

Note. The numbers are approximations. ¹In minutes. ²Sixty minutes per expert for about one third of the matrix. ³Not available.

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Social Network of Decision-Making in Farming System: An Exploratory Study in Rural Areas*****

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The objective of this study was to evaluate the system and assess the overall impact of new farming practices introduced in the area of study. In the context of the overall impact-study, the question as to how the practicing farmers arrive at decisions was also asked in order to understand the process of decision making and the interpersonal ties among the practicing farmers.

In that survey we were interested in studying, among other things, how agricultural practices are disseminated. It was apparent to the present researcher that there was an underlying network through which the practices are disseminated. For example, whether a farmer will go for a new crop or a new variety of the same crop depends not only on whether he is aware of it or has access to that particular kind of crop or variety, but also the opinions expressed by those he consults, be they friends, neighbours, close kin, distant kin, co-farmers, co-villagers, persons with political or economic authority/power, development agents or government officials. Though ultimately the decision is his, he will try to gather information about the cost, the risks, the benefits etc., about the new venture he proposes to make from all these persons. Thus the interpersonal network plays an important role in such matters and we make an attempt to formulate how networking among and by the farmers is conducted. It appeared very much relevant to the present researcher that the grass-root networking should be systematically studied. We take only a preliminary step towards this in the present paper.

Since the above survey was conducted in six districts of three states, one from Orissa and two from West Bengal and three from Bihar, it was decided that at least one cluster from each district needed to be studied. The cluster of villages consisted of 77 tolas (hamlets). These 77 tolas were then classified on consideration of their agro-economic as well as social characteristics, namely (1) land situation, (2) access to some form of irrigation, (3) market-accessibility, and (4) dominant ethnic group. Each of these above four types were divided into the following: i.e., for (1) the subdivisions were whether agriculturally suitable or unsuitable,

***** I am greatly indebted to Prof. A.R. Rao for his comments and constructive criticism on the primary draft without which this could not have been prepared. Rabindranath Jana my esteemed colleague helped me in statistical analyses of the data I collected. He deserves my sincere gratitude. Any mistake which might have been there is my responsibility.

for (2) having assured irrigation or no irrigation, for (2) with or without market-accessibility and for (4) whether predominantly tribal or not. Thus there were sixteen categories in which to classify the 77 tolas of which 34 tolas were selected on the principle that at least 2 or more tolas would be taken up from each stratum and in case there is a lone tola in any stratum, the lone one would be picked up.

The survey was conducted on a total of about 204 respondents (households) in 34 tolas (hamlets) of 6 clusters of 19 villages spread over 6 districts of the states of West Bengal, Bihar and Orissa in the Eastern India plateau region. The present researcher carried out the survey in 11 out of the 34 tolas covering 67 of the total of 204 households. In each tola, 6 households were chosen, two from each of the annual food intake categories surplus, sufficient and deficient, (except that in one tola an extra household was included from the different category). In Table 1, we list the clusters, their location and the number of respondents chosen from each cluster.

Table 1: Clusters and Respondents

Sl. No	State	District	Cluster	Number of selected Tolas	Total number of respondents	Number of Tolas in network study	Number of respondents for network study
1.	West Bengal	Kaipara	Purulia	5	37	2	12
2.	"	Milanchak	Birbhum	5	36	2	12
3.	Bihar	Hundru	Palamau	6	35	2	12
4.	"	Bajha	Hazaribagh	7	24	1	7
5.	"	Bagda	Ranchi	6	35	2	12
6.	Orissa	Dholpusi	Dhenkanal	5	36	2	12
				34	204	11	67

To understand the network properly, the present researcher thought that reciprocal ties were also important. But unfortunately due to time and resource constraints it was not possible to collect information on reciprocity. Only one way relationship about how our respondent was given any kind of counsel or material help by others was studied and this relationship is the subject of the present paper. The author proposes to study reciprocity as a next step in the study.

As the respondents were mostly tribals and majority of them were illiterate, we collected information by asking several questions informally like: What do you do when you hear about a particular agricultural practice? Do you consult anybody in this matter? What do you do when you are in distress, when you are in need of money, agricultural inputs or advice regarding agricultural practices? What did you do last year in this regard? To how many persons did you go for any kind of help last year? Who are they? Were they located within the village or outside? What are the categories of persons (like kins, friends, neighbours, government officials etc.) you approached and how many in each category?

It also occurred to this researcher that it would be interesting to collect information on not only whom one did approach for help or advice but also whom one could possibly approach for such help or advice (depending on his perception). This, we may say, gives the potential or maximum possible number of persons to whom the respondent could have gone for help or guidance before making decisions.

The method of collecting this information was through a questionnaire. Wherever necessary open-end discussion was also undertaken to get proper answer to the specific questions. These questions were asked in order to quantify the actual and potential number of persons belonging to different categories, the farmer did or could have approached. The information collected is presented in Table 2.

Table 2: Number of Persons Approached in One Year (Actual) and Approachable (Potential) by Respondents in Different Clusters

Cluster	N of Resp		Close-kin	Distant Kin	Neighbor	Friends	Political Workers	Others	Total	Govt Officials	Others	Total	Grand Total
Kaipara	12	Actual	14 (20.89)	3 (4.48)	7 (10.45)	19 (28.36)	9 (13.43)	3 (4.48)	55 (82.09)	4 (5.97)	8 (11.94)	12 (17.92)	67 (100.0)
		Potential	14 (12.96)	3 (2.78)	13 (12.04)	26 (24.07)	11 (10.18)	17 (15.74)	84 (77.78)	8 (7.41)	16 (14.81)	24 (22.23)	108 (100.0)
Milanchak	12	Actual	13 (25.49)	2 (3.92)	1 (1.97)	16 (31.37)	4 (7.83)	3 (5.88)	39 (76.47)	1 (1.97)	11 (21.57)	12 (23.53)	51 (100.0)
		Potential	13 (12.75)	12 (11.76)	13 (12.75)	21 (20.59)	7 (6.86)	12 (11.76)	78 (76.47)	6 (5.88)	18 (17.65)	24 (23.53)	102 (100.0)
Hundru	12	Actual	10 (22.23)	1 (2.22)	10 (22.23)	11 (24.44)	2 (4.44)	1 (2.22)	35 (77.78)	-	10 (22.22)	10 (22.23)	45 (100.0)
		Potential	10 (13.89)	7 (9.72)	19 (26.39)	11 (15.28)	5 (6.94)	7 (9.72)	59 (81.94)	-	13 (18.06)	13 (18.06)	72 (100.0)
Bajha	7	Actual	10 (40.00)	2 (8.00)	-	5 (20.00)	2 (8.00)	1 (4.00)	20 (80.00)	-	5 (20.00)	5 (20.00)	25 (100.0)
		Potential	10 (24.39)	4 (9.76)	4 (9.76)	7 (17.07)	3 (7.32)	2 (4.87)	30 (73.17)	3 (7.32)	8 (19.51)	11 (26.83)	41 (100.0)
Bagda	12	Actual	15 (40.54)	5 (13.51)	9 (24.33)	6 (16.22)	1 (2.70)	1 (2.70)	37 (100.0)	-	-	-	37 (100.0)
		Potential	20 (27.78)	14 (19.44)	16 (22.22)	6 (8.33)	5 (6.94)	4 (5.57)	65 (90.28)	-	7 (9.72)	7 (9.72)	72 (100.0)
Dholpusi	12	Actual	14 (25.00)	5 (8.93)	4 (7.14)	15 (26.79)	3 (5.36)	2 (3.57)	43 (76.79)	1 (1.78)	12 (21.43)	13 (23.21)	56 (100.0)
		Potential	15 (15.00)	12 (12.00)	18 (18.00)	18 (18.00)	10 (10.00)	8 (8.00)	81 (81.00)	4 (4.00)	15 (15.00)	19 (19.00)	100 (100.0)
Total	67	Actual	76 (27.05)	18 (6.40)	31 (11.04)	72 (25.62)	21 (7.47)	11 (3.92)	229 (81.50)	6 (2.13)	46 (16.37)	52 (18.50)	281 (100.0)
		Potential	82 (16.57)	52 (10.50)	83 (16.77)	89 (17.98)	41 (8.28)	50 (10.10)	397 (80.20)	21 (4.25)	77 (15.55)	98 (19.80)	495 (100.0)

From the discussion which we had with the farmers, it was apparent that decision making for agricultural development was related to social factors influencing the decisions. We therefore, found it worthwhile to study the social network of various decision making in the farming system. The organisational forms that existed in the villages in our study area, were identified as follows: (a) Caste, (b) Friends, (c) Neighbours, (d) Kin (close and distant), (e) Patron-clients, (f) Political coteries, (g) Formal bodies like Panchayat, Samabaya Krishi Unnoyan Samity, etc., and, (h) Informal bodies like clubs, recreation centres, religious groups.

It was observed that respondents of the 67 households under study had ties with kin, friends, neighbours, as well as (for simplicity) rest of villagers and also outsiders. It is also interesting

to note that none of the household was completely isolated in so far as counselling and taking material help etc. were concerned.

The data in Table 3 on potential and actual number of helpful persons help us address the following questions:

Table 3: Average Number of Persons Approached in One Year (Actual) and Approachable (Potential) per Respondent in Different Clusters

Cluster	N of Resp		Close-kin	Distant Kin	Neighbor	Friends	Political Workers	Others	Total	Govt Officials	Others	Total	Grand Total
Kaipara	12	Actual	1.17	0.25	0.58	1.58	0.75	0.25	4.58	0.33	0.67	1.00	5.58
		Potential	1.17	0.25	1.08	2.17	0.92	1.42	7.00	0.67	1.33	2.00	9.00
Milanchak	12	Actual	1.08	0.17	0.08	1.33	0.33	0.25	3.25	0.08	0.92	1.00	4.25
		Potential	1.08	1.00	1.08	1.75	3.14	1.00	6.50	0.50	1.50	2.00	8.5
Hundru	12	Actual	0.83	0.08	0.83	0.92	0.17	0.08	2.92	0	0.83	0.83	3.75
		Potential	0.83	0.58	1.58	0.92	0.42	0.58	4.92	0	1.08	1.08	6.00
Bajha	7	Actual	1.43	0.28	0	0.71	0.28	0.14	2.86	0	0.71	0.71	3.57
		Potential	1.43	0.57	0.57	1.00	0.43	0.29	4.29	0.43	1.14	1.57	5.86
Bagda	12	Actual	1.25	0.42	0.75	0.50	0.08	0.08	3.08	0	0	0	3.08
		Potential	1.68	1.17	1.33	0.50	0.42	0.33	5.42	0	0.58	0.58	6.00
Dholpusi	12	Actual	1.17	0.42	0.33	1.25	0.25	0.17	3.58	0.08	1.00	1.08	4.67
		Potential	1.25	1.00	1.50	1.50	0.83	0.67	6.75	0.33	1.25	1.58	8.33
Total	67	Actual	1.13	0.27	0.46	1.07	0.31	0.16	3.42	0.09	0.67	0.78	4.19
		Potential	1.22	0.78	1.24	1.33	0.61	0.75	5.92	0.31	1.15	1.46	7.39

1. Is there any significant difference between the clusters of villages (Kaipara, Milanchak, Hundru, Bajha, Bagda & Dholpusi) and between the categories of villagers (like close-kin, distant kin, neighbours, friends, political members, others) on average number of:
 - (i) potential helpful persons per respondent.
 - (a) If the significant difference between the clusters exists, then which one of the clusters will give the maximum potential helpful persons on average?
 - (b) If the significant difference between the categories of villagers occurs, then which one of them will give the maximum potential helpful persons on average?
 - (ii) actual helpful persons per respondent.
 - (a) Same as (a) of (i) for actual helpful persons.
 - (b) Same as (b) of (i) for actual helpful persons.

2. Is there any significant difference between the village-clusters and between the categories of outsiders (like Government official, others) on average number of
 - (i) potential helpful person per respondent. If significant differences exist, then

- (a) which one of the clusters will give here maximum potential helpful persons on average?
 - (b) which one of the categories of outsiders will give maximum potential persons on average?
- (ii) actual helpful persons per respondent.
 - (a) Same as (a) of (i) for actual helpful persons.
 - (b) Same as (b) of (i) for actual helpful persons.
- 3. Does the nature of inhabitants (villagers, outsiders) differ significantly and do the clusters also differ significantly on the average number of
 - (i) the potential helpful persons per respondent. If significant differences occur, then
 - (a) which category of villagers and outsiders will give, on average, maximum potential helpful persons?
 - (b) which one of the clusters, will give, on average, maximum potential helpful persons?
 - (ii) the actual helpful persons per respondent. If significant differences occur,
 - (a) Same as (a) of (i) for actual helpful persons.
 - (b) Same as (b) of (i) for actual helpful persons.
- 4. Is there any caste effect on
 - (i) potential of all villages?
 - (ii) actual of all villages?
 - (iii) If caste-effects on the number of potential and actual helpful persons exist, then which one of the castes has maximum effect on each of them respectively?
- 5. Three questions:
 - (i) Is there a correlation between the number of potential and actual helpful persons of the inhabitants within each village.
 - (ii) Is there a correlation between the number of potential and actual helpful persons within the villages.
 - (iii) What is the type of the correlation between family size and
 - (a) the number of potential helpful persons within each village.
 - (b) the number of actual helpful persons within each village.
 - (c) the number of potential helpful persons within all villages, considered as one.
 - (d) the number of actual helpful persons within all villages, considered as one.
- 6. To find the proportion of actual helpful persons to the potential helpful persons per respondent in each village.
- 7. To compare the consistency of the number of potential helpful persons to that of the number of actual helpful persons.
 - (i) within a village?
 - (ii) within the villages?

The analysis of our survey-data offered the answers to the above questions. The analyses and calculations have been provided in Tables 4.1-4.4, 5.1-5.4, 6.1-6.4, 7.1-7.4, 8.1-8.2 and 9.1

The answer to question 1 is:

- (i) The number of potential helpful persons does not significantly differ with the differences of village clusters at 5% level of significance. In other words, potential helpful persons are not affected by clusters. Also potential helpful persons are unaffected by the different categories of villagers at 1% level of significance. But they are slightly affected by the categories of villagers at 5% level of significance and hence here we are to seek. Which one of the categories will give maximum potential helpful persons on average. At 5% level of significance the category N+D.K gives the maximum average (1.95) potential helpful persons and others the minimum (0.715). It is also observed that 'others' & N+D.K show significant difference. But Close Kin (C.K.), Friend (F) and political person (P) show no significant difference. (vide Tables 4.1 and 4.2).
- (ii) Actual helpful persons are not affected by village-clusters at 5% level of significance, but highly affected by the categories of villagers which is just opposite to the above results shown in (i) at 1% level of significance. Here 'C.K.' gives the maximum average actual helpful persons and 'others' the minimum. 'P', 'D.K.+N' & 'F' show no significant difference, but average actual helpful persons of 'P' is significantly less than that of 'C.K.' and that of 'D.K.+N' & 'F' is significantly greater than 'others' (vide Table 4.3 and 4.4).

Table 4.1: Average Number of Potential Helpful Persons by Villager Type and Cluster

Clusters	Close kin	Neighbor or distant Kin	Friends	Political members	Others	Total
Kaipara	1.17	1.33	2.17	0.92	1.42	7.01
Milanchak	1.08	1.08	2.08	1.75	3.14	9.05
Hundru	0.83	2.16	0.92	0.42	0.58	4.91
Bajha	1.43	1.14	1.00	0.43	0.29	4.29
Bagda	1.68	2.5	0.50	0.42	0.33	5.43
Dholpusi	1.25	1.25	2.5	1.50	0.83	6.75
Total	7.44	11.71	7.84	6.16	4.29	37.44
Average	1.24	1.95	1.30	1.02	0.71	

Table 4.2: ANOVA of Potential Helpful Persons by Villager Type and Cluster

Source of Variation	df	SS	MS	Obs. F	F at 5%	F at 1%

Clusters	5	2.99532	0.599064	1.587181	2.71	4.10
Categories of villagers	4	4.99038	1.247595	3.305421	2.87	4.43
Error	20	7.54878	0.377439			
Total	29	15.53448				

The answer to Question Number 2 is found from tabulated data on potential and actual helpful persons in two-way (village clusters X categories of village-outsiders) table.

- (i) Here, number of potential helpful persons is unaffected village-clusters at 5% level of significance. Hence at 5% level of significance two categories differ significantly i.e. potential helpful persons will be different from category to category in case of village-outsiders. Also at 5% level, category 'others' of village-outsiders gives maximum average potential helpful persons (1.16) (vide Table 5.1 and 5.2).

Table 4.3: Average Number of Actual Helpful Persons by Villager Type and Cluster

Clusters	Close kin	Neighbour and distant kin	Friends	Political members	Others	Total
Kaipara	1.17	0.83	1.58	0.75	0.25	4.58
Milanchak	1.08	0.25	1.33	0.33	0.25	3.24
Hundru	0.83	0.91	0.92	0.17	0.08	2.91
Bajha	1.43	0.28	0.71	0.28	0.14	2.84
Bagda	1.25	1.17	0.50	0.08	0.08	3.08
Dholpusi	1.17	0.75	1.25	0.25	0.13	3.55
Total	6.93	4.19	6.29	1.86	0.93	20.20
Average	1.16	0.69	1.04	0.31	0.15	

Table 4.4: ANOVA of Actual Helpful Persons by Villager Type and Cluster

Source of Variation	df	SS	MS	Obs. F	F at 5%	F at 1%
Clusters	5	0.41932	0.083864	1.0645	2.71	4.10
Categories of villagers	4	4.645	1.16125	14.74	2.87	4.43
Error	20	1.57568	0.078784			
Total	29	6.64				

Table 5.1: Average Number of Potential Helpful Persons by Outsider Type and Cluster

Clusters	Govt. Official	Others	Total
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Kaipara + Bajha	0.58	1.26	1.84
Millanchak + Hundru	0.25	1.29	1.54
Bagda + Dholpusi	0.17	0.917	1.087
Total	1.00	3.467	4.467

Table 5.2: ANOVA of Potential Helpful Persons by Outsider Type and Cluster

Source of Variation	df	SS	MS	Obs. F	F at 5%	F at 1%
Clusters	2	0.143684	0.071842	3.915	19.00	99.00
Categories of villagers	1	1.014329	1.014329	55.277	18.51	98.50
Error	2	0.0367	0.01835			
Total	5	3.3257				

- (ii) Number of actual helpful persons is unaffected by village-clusters at 5% level of significance and also by categories of village outsiders at 1% level of significance. But it is affected by category of village-outsiders at 5% level of significance. But it is affected by category 'others' of village-outsiders shows the maximum actual helpful persons and two categories show significant differences at 5% level of significance (vide Table 5.3 and 5.4).

Table 5.3: Average Number of Actual Helpful Persons by Outsider Type and Cluster

Clusters	Govt. Official	Others	Total
Kaipara + Bajha	0.21	0.68	0.89
Millanchak + Hundru	0.04	0.875	0.915
Bagda + Dholpusi	0.04	0.5	0.54
Total	0.29	2.055	2.345

Table 5.4: ANOVA of Actal Helpful Persons by Outsider Type and Cluster

Source of Variation	df	SS	MS	Obs. F	F at 5%	F at 1%
Clusters	2	0.043958	0.021979	0.962771	19.00	99.00
Categories of villagers	1	0.519204	0.519204	22.74309	18.51	98.50
Error	2	0.045658	0.022829			
Total	5	0.608820				

The answer corresponding to Question Number 3 is:

- (i) From Table 6.1 and ANOVA Table 6.2 it can be concluded that number of potential helpful persons does not vary between village-clusters at the 5% level of significance, but it depends upon the nature of inhabitants. It is clear from the analysis that villagers supply the maximum potential helpful persons. Also villagers and village-outsiders differ significantly at 1% level of significance.
- (ii) From Table 6.3 and the ANOVA Table 6.4 it is clear that number of actual helpful persons is also unaffected by the village-clusters at 5% level of significance but affected by the nature of inhabitants at 1% level of significance. Here also villagers show the maximum average number of actual helpful persons and the villagers and village-outsiders show the difference significantly at 1% level of significance.

Table 6.1: Number of Potential Helpful Persons by Cluster and Inhabitant Type

Clusters	Villagers	Outsiders	Total
Kaipara	7.0	2.0	9
Millanchak	6.5	2.0	8.5
Hundru	4.92	1.08	6.0
Bajha	4.29	1.57	5.86
Bagda	5.42	0.58	6.0
Dholpusi	6.75	1.58	8.33
Total	34.88	8.81	43.69

Table 6.2: ANOVA of Potential Helpful Persons by Inhabitant Type and Cluster

Source of Variation	df	SS	MS	Obs. F	F at 5%	F at 1%
Clusters	5	5.42124	1.084248	2.536636	5.05	10.97
Categories of inhabitants	1	56.63707	56.63707	132.5044	6.61	16.26
Error	5	2.137176	0.427435			
Total	11	64.19549				

Table 6.3: Number of Actual Helpful Persons by Cluster and Inhabitant Type

Clusters	Villagers	Outsiders	Total
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Kaipara	4.58	1.00	5.58
Millanchak	3.25	1.00	4.25
Hundru	2.92	0.83	3.75
Bajha	2.86	0.71	3.57
Dholpusi	3.58	1.00	4.58
Total	17.19	4.54	21.73

Table 6.4: ANOVA of Actual Helpful Persons by Inhabitant Type and Cluster

Source of Variation	df	SS	MS	Obs. F	F at 5%	F at 1%
Clusters	4	1.27206	0.318015	1.67222	6.39	15.98
Categories of inhabitants	1	16.00225	16.00225	84.145	7.71	21.20
Error	4	0.7607	0.190175			
Total	9	18.03501				

The answer corresponding to Question Number 4 is:

There is no caste effect on the number of potential helpful persons at 5% level of significance. That is, there is no difference between the castes. Also the number of actual helpful persons is unaffected by the castes at 5% level of significance, i.e, the number of actual helpful persons does not vary from caste to caste (vide Table 7.1 and ANOVA Table 7.2).

Table 7.1: Number of Potential Helpful Persons and Actual Helpful Persons per Respondent byCaste

Caste	Potential	Actual	N obs
General	36.775	21.39	5
ST	30.10	12.795	4
SC	31.30	21.3	5
All	98.075	55.485	14

Table 7.2: ANOVA of Potential and Actual Helpful Persons per Respondent by Caste

Potential helpful persons						
Source of Variation	df	SS	MS	Obs. F	F at 5%	F at 1%

Between Castes	2	4.620225	2.3101125	0.837963	3.98	7.21
Error	11	30.325	2.7568182			
Total	13	34.945225				
Actual helpful persons						
Source of Variation	df	SS	MS	Obs. F	F at 5%	F at 1%
Between Castes	2	3.2734816	1.6367408	1.7511893	3.98	7.21
Error	11	10.281098	0.9346452			
Total	13	13.55458				

The answer to Question 5 is:

In Kaipara there is no correlation between the family size and number of potential helpful persons, also between the family size and number of actual helpful persons. In Bagda and Dholpusi there is no correlation between family size and number of potential helpful persons, but positive correlation between the family size and number of actual helpful persons and also between the number of potential and actual helpful persons. In Milanchak and Bajha the same conclusion holds good. But in Hundru, there is positive correlation between family size and number of potential helpful persons, family size and number of actual helpful persons, number of potential and actual helpful persons. The same conclusion will hold good taken all clusters of villages together (vide Table 8.1 and 8.2).

The answer to Question 6 is:

In Hundru the proportion of actual helpful persons to potential helpful persons is greatest (0.62). But overall, proportion of actual helpful persons to potential helpful persons in each cluster is around 50% (vide Table 9.1).

Table 8.1: Correlations Among Family Size, Number of Potential Helpful Persons and Number of Actual Helpful Persons

N of respondents	Village	r(fsize,potential)	r(fsize,actual)	r(potential,actual)
12	Kaipara	0.06	0.03	0.98*
12	Millanchak	0.22	0.06	0.87*
12	Hundru	0.53*	0.52*	0.898*
7	Bajha	-0.051	0.05	0.86*
12	Bagda	0.41	0.70*	0.696*
12	Dholpusi	0.46	0.57*	0.88*
67	all villages (combined)	0.20*	0.27*	0.89*

*Significant at $p < .05$.

Table 8.2: Family Size, Potential and Actual Number of Helpful Persons by Village

	Mean	Std Dev	Coefficient of variation
Kaipara			
fsize	10.3	6.43	0.598
potential	9	4.63	0.49
actual	5.58	2.61	0.45
Millanchak			
fsize	7.33	3.798	0.50
potential	8.5	4.10	0.46
actual	4.25	1.76	0.40
Hundru			
fsize	9.45	4.54	0.46
potential	6	2.09	0.33
actual	3.75	1.22	0.31
Bajha			
fsize	9.28	2.56	0.26
potential	5.86	2.12	0.33
actual	3.57	1.51	0.39
Bagda			
fsize	5.83	2.21	0.36
potential	6	1.95	0.31
actual	3.08	1.08	0.34
Dholpusi			
fsize	6.42	3.15	0.47
potential	8.33	3.34	0.38
actual	4.67	1.826	0.37
All villages			
fsize	8.01	4.32	0.54
potential	7.39	3.43	0.46
actual	4.19	1.894	0.45

The answer to Question 7 is:

The sample average and standard deviation of family size of Kaipara are greater than the other villages. But family size of Bajha is more consistent than the others. The sample average of family sizes of all villages is 8.01 (vide Table 8.2).

The sample average and s.d. of potential helpful persons of Kaipara is more than in the other villages. But this is more consistent (low s.d.) in Bajda than the others.

The sample average and s.d. of actual helpful persons in Kaipara is more than the others. But it is more consistent in Hundru than in the others.

The analysis above helps us to summarize the findings provided below:

- (1) The number of potential helpful persons as well as that of actual helpful persons do not depend upon village-clusters but depend upon the categories of villagers and of village-outsiders. For example, the category 'N+D.K.' shows the maximum average potential and actual helpful persons.
- (2) The potential helpful persons and actual helpful persons vary between the villagers and village-outsiders. Also most of the potential helpful persons and actual helpful persons come from villagers.

Table 9.1: Proportion of Actual to Helpful Persons

Clusters	Estimate of N of Potential Helpful Persons Per Respondent	Estimate of N of Actual Helpful Persons Per Respondent	Proportion of Actual to Potential Helpful Persons
Kaipara	9.00	5.58	0.62
Milanchak	8.50	4.25	0.50
Hundru	6.00	3.75	0.62
Bajha	5.86	3.57	0.61
Bagda	6.00	3.08	0.51
Dholpusi	8.33	4.67	0.56
Overall	7.40	4.20	0.57

- (3) There is no caste-effect on potential and actual helpful persons.
- (4) In Kaipara, Milanchak and Bajha, there is no effect of family size on potential and actual helpful persons. In Bagda and Dholpusi there is no effect of family size on potential helpful persons but in these two village-clusters if family size increases, then the number of actual helpful persons increases. In Hundru, if family size increases, then the number of potential as well as actual helpful persons increase. Same things occur if we take all village-clusters together.
- (5) In Hundru the proportion of actual to potential helpful persons is greatest (62%). The proportions in other clusters are around 50%.
- (6) The family size in Bajha is more consistent than in others. The number of potential helpful persons in Bagda is more consistent than in others. The number of actual helpful persons in Hundru is more consistent than in others, 'more consistent' means variation around the corresponding data is very low.
- (7) If one considers village populations as a whole one can make an estimate of the potential and actual helpful persons per respondent. Table 9.1 presents the estimated number of the above by each cluster and also by all clusters taken together. The estimated average number of potential helpful persons taking all clusters together is 7.40 and the same of actual helpful persons is 4.20. This may possibly be further analysed to examine if larger population has any effect on number of potential as well as actual helpful persons.

Using MDS to Infer Relative Status From Dominance Matrices



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Techniques is a regular column devoted to techniques of data construction, management, and analysis. Contributions are appreciated.

Background. Suppose we have an anti-symmetric matrix in which x_{ij} records the percentage of times that i "beat" j in a contest, and x_{ji} records the proportion of times that j beat i . By definition, $x_{ij} + x_{ji}$ equals a constant. We could be talking about sports teams playing games, animals in dominance encounters, or products in consumer taste tests. For example, in an experiment reported by Guilford (1954), respondents were shown pairs of vegetables and asked to choose the one they preferred. The result was a vegetable-by-vegetable matrix, shown in Table 1, in which x_{ij} gives the percentage of respondents who chose vegetable i over vegetable j . Making the assumption that there exists a common preference ordering across all respondents (i.e. they are all drawn from the same "culture"), the question is whether we can uncover that latent ordering by examining the pattern of frequencies in the table. There are many approaches to this question. In this article, I will give one very simple approach based on ordinary multidimensional scaling.

We begin by considering the process that generates the observed table of frequencies.

What would we expect to happen if two vegetables were equally preferred? Since respondents are forced to make a choice, we would expect that in the long run, about half would choose one and half would choose the other. Consequently, $x_{ij} - x_{ji}$ should be about zero. What if two vegetables are at opposite ends of the preference spectrum? Then one of them will always beat the other, and so the absolute value of $x_{ij} - x_{ji}$ will approach its maximum value, which is $x_{ij} + x_{ji}$. This means, then, that the absolute difference $|x_{ij} - x_{ji}|$ may be used as an indicator of the interval between the vegetables on the latent preference scale.

Table 1. Vegetable preferences.

	Tu	Ca	Be	As	Ca	Sp	St	Pe	Co
Turnip		82	77	81	88	89	90	90	93
Cabbage	18		60	72	74	74	81	85	86
Beets	23	40		56	74	68	85	80	82
Asparagus	19	28	44		56	59	68	60	73
Carrot	12	26	26	44		49	57	71	76
Spinach	11	26	32	41	51		63	68	63
St. Bean	10	19	16	32	43	37		53	64
Peas	11	16	20	40	29	32	47		63
Corn	7	14	18	27	24	37	36	37	

Note, however, that if preference truly is a unidimensional scale, we do not have just one estimate of each interval. For example, consider the ordering of objects (labeled "A" through "E") in the line below. The interval between items B and C may be initially estimated from $|x_{BC}-x_{CB}|$ but it can also be calculated as the difference between the A-C and A-B intervals, as well as the difference between the B-D and C-D intervals, and so on.

A-----B-----C-----D-----E

This redundancy can be put to use. For one thing, if there are missing cells in our data matrix, it seems likely that we can still recover the underlying scale. For another, if our data are subject to random error, we can use this implicit system of equations to average out the errors and get a better estimate of the underlying scale positions

In other words, we would like to find a set of points (corresponding to our items) in 1-dimensional euclidean space such that distances between the items correspond as closely as possible to a set of input proximities defined by $|x_{ij}-x_{ji}|$ for all items. This is precisely the kind of problem that multi-dimensional scaling is designed to solve.

How to do it. The first step is to construct a symmetric difference matrix P from a raw frequency matrix X by setting $p_{ij} = |x_{ij}-x_{ji}|/(x_{ij}+x_{ji})$. Then submit P to a standard multi-dimensional scaling program such as found in SPSS or UCINET (Borgatti *et al.* 1992). When running the program it is important to remember to specify that a 1-dimensional solution is desired, and that the input matrix P is a distance matrix rather than a similarity matrix. The program will then output the coordinates of the points in 1-space; these coordinates are then interpreted as preference scale scores. For the vegetable data, the scale scores using non-metric scaling are given in Table 2.

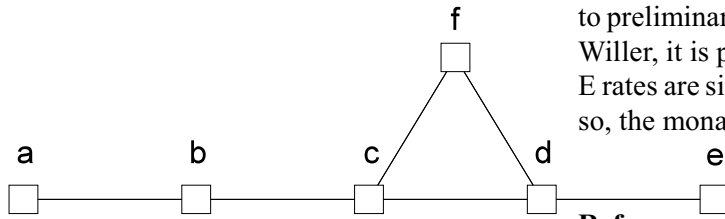
Table 2. Scale scores for vegetables.

Turnip:	-2.19	Spinach: . . . . .	.29
Cabbage:	-.78	Str. Bean: . . . . .	.82
Beets:	-.59	Peas: . . . . .	.87
Asparagus:	-.04	Corn:	1.29
Carrots: . . . . .	.32		

Note that if the stress obtained by the program is excessive, we cannot interpret the 1-dimensional coordinates as preference scores. High stress means that the data are not consistent with a single underlying dimension. In our vegetable example, the stress was high but acceptable, but if not the reason could have been that the seemingly simple construct "preference for vegetables" was not a unidimensional concept, but rather had multiple aspects (e.g., taste, color, texture, cost, nutritional value) which were differentially evoked by different pairs of vegetables.

Exchange networks. Borgatti and Everett (1992:290) deplore that fact that experimental exchange theorists assume power to be a monadic attribute of network positions rather than a dyadic attribute of pairs of nodes. Emerson (1962) had made it a point to note that power is a relation between pairs of actors, not a generalized attribute of the actor as a whole. Yet in some studies (Cook et al 1983; Markovsky et al 1988) the points earned by actors are averaged across all exchanges to yield a single value for each actor. If Emerson was right, this averaging is inappropriate.

We can use the scaling method described above to investigate whether the pairwise exchange rates obtained in the experiments are consistent with an underlying ordering of actors along a unidimensional power continuum, as assumed by modern researchers. Consider the following 6-node graph:



John Skvoretz and David Willer have tested this network in the laboratory.* Preliminary results are given in Table 3.

Table 3. Avg. points received by row actor.

	A	B	C	D	E	F
A		10.31				
B	13.69		11.54			
C		12.46		12.00		12.19
D			12.00		14.20	13.01
E				9.80		
F			11.81	10.99		

The table contains missing values for all pairs of actors that, by experimental design, were not allowed to exchange (e.g., A and C). Due the pattern of missing values (e.g., A and E have only data point), a unique scaling of all points is not possible, although the core nodes C, D and F will be uniquely ordered.

Using metric MDS, the best 1-dimensional scaling has Kruskal stress equal to 0.185, which is high for so few data. This suggests that, contrary to the assumptions of Cook et al. and Markovsky et al., power cannot be reduced to a nodal attribute. However, the conclusion is not unequivocal since it is unclear whether the small differences in observed exchange rates can be attributed to sampling and measurement error. According

to preliminary statistical tests by Skvoretz and Willer, it is possible that only the A-B and D-E rates are significantly different from zero. If so, the monadic assumption is supported.

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*I am grateful to Skvoretz and Willer for sharing these yet-to-be-published data. Important note: these are preliminary results based on a small sample.

How to Explain Hierarchical Clustering

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The objective of **Teacher's Corner** is to share material helpful to the teaching of network analysis. Contributions to the column are appreciated. Contributions should be short (normally 3 pages or less), and should consist of explanations of network concepts, course syllabi, synopses of famous works, and anything else appropriate to the main objective.

Given a set of N items to be clustered, and an $N \times N$ distance (or similarity) matrix, the basic process of Johnson's (1967) hierarchical clustering is this:

1. Start by assigning each item to its own cluster, so that if you have N items, you now have N clusters, each containing just one item. Let the distances (similarities) between the clusters equal the distances (similarities) between the items they contain.
2. Find the closest (most similar) pair of clusters and merge them into a single cluster, so that now you have one less cluster.
3. Compute distances (similarities) between the new cluster and each of the old clusters.
4. Repeat steps 2 and 3 until all items are clustered into a single cluster of size N .

Step 3 can be done in different ways, which is what distinguishes *single-link* from *complete-*

link and *average-link* clustering. In *single-link* clustering (also called the *connectedness* or *minimum* method), we consider the distance between one cluster and another cluster to be equal to the shortest distance from any member of one cluster to any member of the other cluster. If the data consist of similarities, we consider the similarity between one cluster and another cluster to be equal to the greatest similarity from any member of one cluster to any member of the other cluster. In *complete-link* clustering (also called the *diameter* or *maximum* method), we consider the distance between one cluster and another cluster to be equal to the longest distance from any member of one cluster to any member of the other cluster. In *average-link* clustering, we consider the distance between one cluster and another cluster to be equal to the average distance from any member of one cluster to any member of the other cluster. A variation on average-link clustering is the UCLUS method of D'Andrade (1978) which uses the median distance.

Example. The following pages trace a hierarchical clustering of distances in miles between U.S. cities. The method of clustering is *single-link*.

Input distance matrix:

BOS NY DC MIA CHI SEA SF LA DEN

BOS	0	206	429	1504	963	2976	3095	2979	1949
NY	206	0	233	1308	802	2815	2934	2786	1771
DC	429	233	0	1075	671	2684	2799	2631	1616
MIA	1504	1308	1075	0	1329	3273	3053	2687	2037
CHI	963	802	671	1329	0	2013	2142	2054	996
SEA	2976	2815	2684	3273	2013	0	808	1131	1307
SF	3095	2934	2799	3053	2142	808	0	379	1235
LA	2979	2786	2631	2687	2054	1131	379	0	1059
DEN	1949	1771	1616	2037	996	1307	1235	1059	0

The nearest pair of cities is BOS and NY, at distance 206. These are merged into a single cluster called "BOS/NY".

Then we compute the distance from this new compound object to all other objects. In single link clustering the rule is that the distance from the compound object to another object is equal to the shortest distance from any member of the cluster to the outside object. So the distance from "BOS/NY" to DC is chosen to be 233, which is the distance from NY to DC. Similarly, the distance from "BOS/NY" to DEN is chosen to be 1771.

After merging BOS with NY:

	BOS/NY	DC	MIA	CHI	SEA	SF	LA	DEN
BOS/NY	0	223	1308	802	2815	2934	2786	1771
DC	223	0	1075	671	2684	2799	2631	1616
MIA	1308	1075	0	1329	3273	3053	2687	2037
CHI	802	671	1329	0	2013	2142	2054	996
SEA	2815	2684	3273	2013	0	808	1131	1307
SF	2934	2799	3053	2142	808	0	379	1235
LA	2786	2631	2687	2054	1131	379	0	1059
DEN	1771	1616	2037	996	1307	1235	1059	0

The nearest pair of objects is BOS/NY and DC, at distance 223. These are merged into a single cluster called "BOS/NY/DC". Then we compute the distance from this new cluster to all other clusters, to get a new distance matrix:

After merging DC with BOS-NY:

	BOS/NY/DC	MIA	CHI	SEA	SF	LA	DEN
BOS/NY/DC	0	1075	671	2684	2799	2631	1616
MIA	1075	0	1329	3273	3053	2687	2037
CHI	671	1329	0	2013	2142	2054	996
SEA	2684	3273	2013	0	808	1131	1307
SF	2799	3053	2142	808	0	379	1235
LA	2631	2687	2054	1131	379	0	1059
DEN	1616	2037	996	1307	1235	1059	0

Now, the nearest pair of objects is SF and LA, at distance 379. These are merged into a single cluster called "SF/LA". Then we compute the distance from this new cluster to all other objects, to get a new distance matrix:

After merging SF with LA:

	BOS/NY/DC	MIA	CHI	SEA	SF/LA	DEN
BOS/NY/DC	0	1075	671	2684	2631	1616
MIA	1075	0	1329	3273	2687	2037
CHI	671	1329	0	2013	2054	996
SEA	2684	3273	2013	0	808	1307
SF/LA	2631	2687	2054	808	0	1059
DEN	1616	2037	996	1307	1059	0

Now, the nearest pair of objects is CHI and BOS/NY/DC, at distance 671. These are merged into a single cluster called "BOS/NY/DC/CHI". Then we compute the distance from this new cluster to all other clusters, to get a new distance matrix:

After merging CHI with BOS/NY/DC:

	BOS/NY/DC/CHI	MIA	SEA	SF/LA	DEN
BOS/NY/DC/CHI	0	1075	2013	2054	996
MIA	1075	0	3273	2687	2037
SEA	2013	3273	0	808	1307
SF/LA	2054	2687	808	0	1059
DEN	996	2037	1307	1059	0

Now, the nearest pair of objects is SEA and SF/LA, at distance 808. These are merged into a single cluster called "SF/LA/SEA". Then we compute the distance from this new cluster to all other clusters, to get a new distance matrix:

After merging SEA with SF/LA:

	BOS/NY/DC/CHI	MIA	SF/LA/SEA	DEN
BOS/NY/DC/CHI	0	1075	2013	996
MIA	1075	0	2687	2037
SF/LA/SEA	2054	2687	0	1059
DEN	996	2037	1059	0

Now, the nearest pair of objects is DEN and BOS/NY/DC/CHI, at distance 996. These are merged into a single cluster called "BOS/NY/DC/CHI/DEN". Then we compute the distance from this new cluster to all other clusters, to get a new distance matrix:

After merging DEN with BOS/NY/DC/CHI:

	BOS/NY/DC/CHI/DEN	MIA	SF/LA/SEA
BOS/NY/DC/CHI/DEN	0	1075	1059
MIA	1075	0	2687
SF/LA/SEA	1059	2687	0

Now, the nearest pair of objects is BOS/NY/DC/CHI/DEN and SF/LA/SEA, at

distance 1059. These are merged into a single cluster called "BOS/NY/DC/CHI/DEN/SF/LA/SEA". Then we compute the distance from this new compound object to all other objects, to get a new distance matrix:

After merging SF/LA/SEA with BOS/NY/DC/CHI/DEN:

	BOS/NY/DC/CHI/DEN/SF/LA/SEA	MIA
BOS/NY/DC/CHI/DEN/SF/LA/SEA	0	1075
MIA	1075	0

Finally, we merge the last two clusters at level 1075. This process is summarized by the clustering diagram printed by many software packages:

	M	S		B	C	D		
	I	E	S	L	O	N	D	H
	A	A	F	A	S	Y	C	I
	A	A	F	A	S	Y	C	I
Level	4	6	7	8	1	2	3	5
-----	-	-	-	-	-	-	-	-
206	.	.	.	.	XXX	.	.	.
233	.	.	.	.	XXXXX	.	.	.
379	.	.	XXX	XXXXX	.	.	.	.
671	.	.	XXX	XXXXXXXX	.	.	.	.
808	.	XXXXX	XXXXXXXX	.	.	.	.	.
996	.	XXXXX	XXXXXXXXXX	.	.	.	.	.
1059	.	XXXXXXXXXXXXXXXXXX	.	.	.	.	.	.
1075	XXXXXXXXXXXXXXXXXXXX	.	.	.	.	.	.	.

D'andrade,R. 1978, "U-Statistic Hierarchical Clustering" *Psychometrika*, 4:58-67.

Johnson,S.C. 1967, "Hierarchical Clustering Schemes" *Psychometrika*, 2:241-254.

In the diagram, the columns are associated with the items and the rows are associated with levels (stages) of clustering. An 'X' is placed between two columns in a given row if the corresponding items are merged at that stage in the clustering.

References

Abstracts: ARTICLES

Adams, Rebecca G. and Rosemary Blieszner. 1994. An Integrative Conceptual Framework for Friendship Research. *Journal of Social and Personal Relationships* 11:163-184.

In light of the increase in the number and rigor of studies on adult friendship and the tendency of kin and neighbor relationships to have become more structurally similar to friendship, this is a crucial juncture at which to pause and assess what we know and do not know about adult friendship, to begin a needed theoretical synthesis, to identify gaps in the literature and to produce guidelines for future research. The purpose of this article is to present an integrative conceptual framework, incorporating both sociological and psychological perspectives, for use in these endeavors. The framework posits that the social structural and psychological aspects of individual characteristics operate together to shape behavioral motifs which, in turn, influence friendship patterns (dyadic and network structure and phases). Furthermore, dyadic and network structure and phases affect one another through interactive friendship processes. The elements of this integrative framework and the relationships among them vary by structural and cultural context.

Anderson, Robert N. and Rogelio Saenz. 1994. Structural Determinants of Mexican American Inter-marriage, 1975-1980. *Social Science Quarterly* 75:414-430.

This paper uses the structural theoretical perspective and data from the 1980 Census to examine the impact of pertinent structural determinants on Mexican American inter-marriage with Anglos across 53 metropolitan statistical areas in the southwest United States. The findings show that opportunity for contact, levels of Spanish language maintenance,

and internal status diversity are important statistically. This lends general support for the structural theoretical perspective as it relates to the understanding of Mexican American inter-marriage with Anglos.

Axelrod, Robert and D. Scott Bennet. 1993. A Landscape Theory of Aggregation. *British Journal of Political Science* 23:211-233.

Aggregation means the organization of elements of a system into patterns that tend to put highly compatible elements together and less compatible elements apart. Landscape theory predicts how aggregation will lead to alignments among actors (such as nations), whose leaders are myopic in their assessments and incremental in their actions. The predicted configurations are based upon the attempts of actors to minimize their frustration based upon their pairwise propensities to align with some actors and oppose others. These attempts lead to a local minimum in the energy landscape of the entire system. The theory is supported by the results of two cases: the alignment of seventeen European nations in the Second World War and membership in competing alliances of nine computer companies to set standards for Unix computer operating systems. The theory has potential for application to coalitions or political parties in parliaments, social networks, social cleavages in democracies and organizational structures.

Baba, Yasunori and Ken-ichi Imai. 1993. A Network View of Innovation and Entrepreneurship: The Case of the Evolution of VCR Systems. *International Social Science Journal* 45: 23-34.

The emergence of generic technologies, notably information technologies (ITs), exerts a strong impact on the entire range of products and services. Eventually, it triggers a creative gale of destruction in the existing indus-

trial/market order, and brings about a continuous flow of entrepreneurial opportunities. Innovations in the IT era are typically generated by industrial linkages across the borders of specific sectors and scientific disciplines. Or, conversely, ITs act as catalysts triggering clusters of innovation that branch out in a systemic way. Several technological trajectories and market evolution patterns are possible, so that the industrial milieu is conditioned by a heightened degree of uncertainty. Faced with the current move towards globalization, we shall focus in this article on examining the type of organizational and managerial arrangement that is most adequate to cope with this uncertainty.

Baerveldt, Chris and Tom Snijders. 1994. Influences on and from the Segmentation of Networks: Hypotheses and Tests. *Social Networks* 16:213-232.

This article discusses (a) the influence of network structure on the diffusion of (new) cultural behavior within the network and (b) the influence of external events, especially of social programs, on the diffusion of (new) cultural behavior, and on the network structure. Hypotheses are formulated and tested on data from a study on the diffusion of petty crime in pupils' networks in high schools. To test these hypotheses we propose and use a new measure of network structure: the segmentation index.

Banks, David and Kathleen Carley. 1994. Metric Inference for Social Networks. *Journal of Classification* 11:121-149.

Using a natural metric on the space of networks, we define a probability measure for network-valued random variables. This measure is indexed by two parameters, which are interpretable as a location parameter and a dispersion parameter. From this structure, one can develop maximum likelihood estimates, hypothesis tests and confidence regions, all in

the context of independent and identically distributed networks. The value of this perspective is illustrated through application to portions of the friendship cognitive social structure data gathered by Krackhardt (1987).

Barr, Richard, S. and Betty L. Hickman. 1994. Parallel Simplex for Large Pure Network Problems: Computational Testing and Sources of Speedup. *Operations Research* 42:65-80.

This paper reports on a new parallel implementation of the primal simplex method for minimum cost network flow problems that decomposes both the pivoting and pricing operations. The self-scheduling approach is flexible and efficient; its implementation is close in speed to the best serial code when using one processor, and is capable of substantial speedups as parallel computing units are added. An in-depth computational study of randomly generated transportation and transshipment problems verified the effectiveness of this approach, with results on a 20-processor 80386-based system that are competitive with, and occasionally superior to, massively parallel implementations using tens of thousands of processors. A micro-analysis of the code's behavior identified unexpected sources of (the occasionally superlinear) speedup, including the evolutionary topology of the network basis.

Batagelj, Vladimir. 1994. Semirings for Social Networks Analysis. *Journal of Mathematical Sociology* 19:53-68.

In the paper four semirings for solving social networks problems are constructed. The closures of the matrix of a given signed graph over balance and cluster semirings can be used to decide whether the graph is balanced or clusterable. The closure of relational matrix over geodetic semirings contains for every pair of vertices u and v the length and the number of u - v geodesics; and for geodesic

semiring the length and the set of vertices on u-v geodesics. The algorithms for computing the geodetic and the geosetic closure matrix are also given.

Bates, Timothy. 1994. Social Resources Generated by Group Support Networks May Not Be Beneficial to Asian Immigrant-Owned Small Businesses. *Social Forces* 72:671-689.

The immigrant entrepreneur is often seen as a member of supportive peer and community subgroups. These networks assist in the creation and successful operation of firms by providing social resources in the form of customers, loyal employees, and financing. This study provides evidence that the success and survival patterns of Asian immigrant firms derive from their large investments of financial capital and the impressive educational credentials of the business owners. Heavy use of social support networks typifies the less profitable, more failure-prone small businesses of Asian immigrants.

Berger, Raymond M. and David Mallon. 1993. Social Support Networks of Gay Men. *Journal of Sociology and Social Welfare* 20:155-174.

Although social workers and other helping professionals frequently stress the importance of social networks among gay men, there has been little empirical research to describe these networks. In the present study, the authors analyze data on perceived social support from 166 gay men recruited through gay community groups and social networks. Most gay men were found to have large and diverse social networks. Frequent communication occurs between respondents and network members, most of whom know of respondents' homosexuality. The most frequent and supportive network member was a close friend, and the most common type of support received was emotional. Those not in a

committed relationship, and those living alone, are more likely to report feelings of loneliness and to talk to network members more often.

Bowers, Louise, Peter K. Smith and Valerie Binney. 1994. Perceived Family Relationships of Bullies, Victims and Bully/Victims in Middle Childhood. *Journal of Social and Personal Relationships* 11:215-232.

A multi-theoretical perspective was used to identify family patterns as perceived by children who bully others at school, are victims of such bullying, or both (bully/victims). A sample of 20 bullies, 20 victims, 20 bully/victims and 20 control children was selected from three middle schools by peer nomination. Four assessment measures, the Family Relations Test, the Parenting Style Questionnaire, the Family Systems Test and the Separation Anxiety Test, were used. The four subgroups yielded quite distinct profiles on the first three of these tests. The results show the importance of treating bully/victims as a separate subgroup, and the utility of considering the child's perspective on family relations. Results for the Separation Anxiety Test were nonsignificant and the implications of this are discussed.

Braadbaart, Okke. 1994. Business Contracts in Javanese Vegetable Marketing. *Human Organization* 53:143-159.

The paper looks at long-term personalized business contracts in Javanese vegetable marketing as mechanisms for coping with pervasive uncertainty. It thereby builds on a perspective evolving in both anthropology and in industrial sociology. Comparing exchange relationships along two vegetable assembly channels, it finds a rich variety of contract and non-contract forms of exchange. Comparative analysis indicates close links between exchange patterns and market micro-environment, a finding that confirms the

"uncertainty-handling" hypothesis. The study also provides some support for the proposition, advanced in industrial sociology, that firms engage in long-term contracts in order to bridge market failure problems arising from the interdependency of their actions. Longitudinal studies of contracting are suggested as a promising tool for future research on contracting practice.

Brajkovich, Leo F. 1994. Sources of Social Structure in a Start-Up Organization: Work Networks, Work Activities, and Job Status. *Social Networks* 16:191-212.

This paper explores possible salient dimensions of social structure in a start-up organizational setting. In particular, the relationship between judged similarity and three types of data representing structure in a small entrepreneurial medical technology firm is examined. Data concerning unconstrained judged similarity, work networks, work activities, and job status was collected within a month of the organization's initial start-up utilizing ethnographic, systematic and network methods of data collection. Data was analyzed using hierarchical clustering, multi-dimensional scaling, and correspondence analysis to determine the structure of the organization according to each type of data collected. Measures of similarity were computed to determine the correspondence between the various organizational structures and the patterns of judged similarity of organizational actors. The multiplexity of the organizational structures was also assessed. Findings indicate that patterns of judged similarity correspond equally highly to each of the organizational structures, and that the structures are multiplex in only one case, work networks and work activities. Also, a high degree of consensus exists among the actors concerning their perceptions of organizational structure. Implications for research on social cognition, the process of innovation, and the growth of entrepreneurial organizations are

discussed.

Braun, Norman. 1994. Restricted Access in Exchange Systems. *Journal of Mathematical Sociology* 19:129-148.

A generalized version of Coleman's rational choice model for pure exchange in a perfectly competitive setting is extended by introducing the possibility of imperfect access between actors. Imperfect access is assumed to affect the individual opportunity set for purchasing control over more interesting resources. Starting from this conceptualization, the effects of restricted access on the central outcomes of exchange are studied without leaving the general equilibrium framework. Structural variables such as actor dependency, prestige, centrality, and status are specified for exchange situations with imperfect access between competing market participants.

Brossier, Gildas. 1994. Partial Dissimilarities with Application to Clustering. *Journal of Classification* 11:37-58.

We consider dissimilarities which are defined only on some pairs of items. Such situations may occur in some problems like unfolding or merging, or can be encountered as an intermediate step of a more general transformation. We give necessary and sufficient conditions for the existence of extensions with good properties and characterize the family of such extensions. Using partial dissimilarities we construct a dissimilarity-into-distance transformation family.

On s'intéresse aux dissimilarités qui ne sont définies que sur certaines paires d'éléments. Cette situation se rencontre dans certains types de problèmes tel que les déploiements ou les mélanges. Elle peut également intervenir comme une étape intermédiaire d'une transformation plus générale. On donne des conditions nécessaires et suffisantes pour qu'il existe des extensions ayant de bonnes

propriétés et on caractérise la famille obtenue. Par l'intermédiaire des dissimilarités partielles on construit une famille de transformation d'une dissimilarité en une distance.

Bukowski, William M., Betsy Hoza and Michael Boivin. 1994. Measuring Friendship Quality During Pre- and Early Adolescence: The Development and Psychometric Properties of the Friendship Qualities Scale. *Journal of Social and Personal Relationships* 11:471-484.

The Friendship Qualities Scale is a theoretically grounded, multidimensional measurement instrument to assess the quality of children's and early adolescents' relationships with their best friends according to five conceptually meaningful aspects of the friendship relation. These dimensions are companionship, conflict, help/aid, security and closeness. A confirmatory factor analysis, used to evaluate the factor structure of this instrument, demonstrated that these scales represented distinct, but related, domains of friendship. Assessments of reliability indicated the high level of internal consistency within each dimension. The validity of the scale was indicated by the observation of higher ratings for (a) mutual friends than for non-mutual friends, and (b) for stable friends than for non-stable friends. These findings are discussed according to the theoretical and practical issues related to the measurement of friendship quality.

Bukowski, William M., Betsy Hoza and Andrew F. Newcomb. 1994. Using Rating Scale and Nomination Techniques to Measure Friendship and Popularity. *Journal of Social and Personal Relationships* 11:485-488.

The associations between measures of friendship and popularity derived from nomination and rating scales procedures were studied with a sample of school-age and early adolescent

boys and girls. Confirmatory factor analyses and comparisons of the correlations among these measures showed that each of these techniques can provide parallel measures of popularity (i.e., sociometric preference) and friendship (i.e., whether the child is participating in a mutual friendship). These findings are discussed in regard to measurement issues in the study of friendship and popularity.

Burton, Linda M. Intergenerational Legacies and Intimate Relationships: Perspectives on Adolescent Mothers and Fathers. *ISSPR Bulletin* 10:1-3.

Both conventional wisdom and clinical studies suggest that families have the tendency to replicate behaviors across generations. The replication of behaviors is particularly apparent in male/female relationships (Caspi & Elder, 1988; Chodorow, 1978; Heiss, 1972). The dynamic may be especially true in the relationships of adolescent mothers and their male partners (Ladner & Gourdine, 1984). For example, a number of ethnographic studies of African-American families with teenage child bearers indicate that grandmothers, mothers, and daughters make similar decisions concerning mate selection, the timing of childbearing, and marriage decisions (Burton & Bengtson, 1985; Stack, 1974; Williams, 1991). Comparable patterns of similarity are noted in the dating, mating, and procreating patterns of African-American fathers and sons (Sullivan, 1986). I recently examined intergenerational patterns in attitudes and behaviors concerning male/female relationships in a five-year ethnographic study of urban multi generational African-American families with adolescent child bearers. The purpose of the study was to: (a) identify similarities and differences across generations in the nature of intimate relationships between males and females and (b) determine how these intergenerational similarities and differences are related to the problems ado-

lescent mothers and their male partners experience in establishing intimate relationships. To address these issues, I collected detailed qualitative data on attitudes and behaviors in male/female relationships from 138 teen mothers, their male partners, and family members.

Camagni, Roberto P. and Carlo Salone. 1993. Network Urban Structures in Northern Italy: Elements for a Theoretical Framework. *Urban Studies* 30:1053-1064.

The recent urban dynamics of industrialized countries show the rise of a new spatial order which simplifies "vertical" relationships between the cities and complicates, instead, the "horizontal" interurban patterns. Some northern Italian regions, such as Lombardy, Veneto, and Emilia Romagna, have been characterized historically by polycentric settlement, which constitutes today the spatial texture of functional, economic, and social relationships among the urban places, their hinterlands, and their regions, according to a new order of spatial organization. This is a network-based order, whose theoretical framework remains, as yet, not well founded. The objective of this study is to present a theoretical explanation of spatial change which is happening in the urban systems of old industrialized regions, and particularly in northern Italy, following the industrial restructuring of the late 1970s and 1980s. In these regions, in fact, the historical hierarchy of cities shows a scale shift, both in its internal relations and in relations with the other urban systems of "Lotharingian Europe." It seems to reinforce the spatial and functional connections between the middle-sized centers, whereas the regional capitals, such as Milan and Turin, consolidate their places in the metropolitan network of Eurocities.

Carey, Malachy and Ashok Srinivasan. 1994. Solving a Class of Network Models For Dynamic Flow Control. *European*

***Journal of Operational Research* 75:151-170.**

In modeling flows and controls in transportation, distribution, communication, manufacturing systems, etc., it is often convenient to represent the system as a store-and-forward network. In such networks it is common for time, space, attention, or other resources, to be shared between sets of neighbouring nodes. For example, neighboring nodes may share storage space, machine time, operating time, etc. The allocation of this shared resource among nodes determines a set of 'controls' on the network arc flows. We develop a multi-period network model which describes such storage and forwarding, and the sharing of resources (controls) between subsets of nodes. To solve the model we develop algorithms which take advantage of the embedded network structure of the problem. Each of the algorithms is based on iterating between (a) solving a least-cost capacitated network flow problem with fixed capacities (controls) and (b) solving a set of simple small scale problems to update these controls. In a series of computational experiments we found that an ('unoptimized') implementation of the algorithms performed between 13 and 42 times faster than a good linear programming code, which is the natural alternative. Also, by decomposing the problem, the algorithms make solving larger scale problems tractable, and are suitable for implementation on parallel processors.

de Munck, Victor C. 1994. A Micro-, Meso-, and Macro-level Descriptive Analysis of Disputes within a Social Network: A Study of Household Relations in a Sri Lankan Community. *Anthropos* 89:85-94.

This paper attempts to reconcile three distinct levels of theoretical concern: the macro-, meso- and micro-level. I apply micro-, meso-, and macro-level methods of analysis to the same dataset, a series of disputes among

households in a Sri Lankan Muslim community, to examine where these approaches overlap and are redundant and also how different interpretations can result. At the micro-level, the focus is inevitably on praxis: on individuals interacting in specified contexts. At the meso-level, the anthropologist induces normative models of cultural from aggregated behavior. At the macro-level, formal analysis is used to analyze patterns of behavior and social motivations as derived from the structural positions of actors. Questions regarding linkages between levels, the primacy of one perspective over the other, or the independence of each level is one that can only be resolved through applying these perspectives to similar datasets. Micro-, meso-, and macro-level approaches may be redundant in that they reveal similar truths (the impact of the rock continues to produce concentric circles) but they are not identical nor directly translatable into one another (each circle has a distinct radius, volume, and location). I, therefore, conclude that it is, at present, fantasy to attempt to produce grand synthetic macro-meso-micro theories in social science. It is essential for researchers to recognize the limitations and potentials of each theoretical level. Only then might anthropologists begin to forge a stable cooperative triad out of the forbidden triad that seems to represent our current situation.

De Vree, Johan K. and Johan C. Dagevos. 1993. The Structure of Action and Interaction: The Structural Similarity of Systems in Social Science. *Journal of Mathematical Sociology* 19:91-127.

The term structure is one of the most common words in the vocabulary of the social sciences. Yet, even a cursory glance at the literature reveals that a clear conception of what it means and does, is quite generally lacking. In this contribution we try and develop just such a conception, and show that, and how, it is essential to understanding the mechanics and

dynamics of social systems at any level of inquiry. In particular, it will appear that both individuals and social groups of any kind or size represent nonlinear dynamical systems, something which is not without important consequences for behavioral or sociological research. Moreover, the structure of these several systems turns out to have precisely the same form. As a consequence, too, the common distinction between micro- and macro-sociology loses much of its dogmatic or theoretical meaning.

Dijkstra, Wil. 1994. Sequence - A Program for Analysing Sequential Data. *Bulletin de Méthodologie Sociologique* 43:134

The SEQUENCE program offers a wide range of procedures for the analysis of sequential data. In addition to usual kinds of analyses like lag-sequential analysis, the program is especially developed to answer questions with respect to the occurrence of particular patterns in sequences and the degree of similarity between different sequences.

Doreian, Patrick. 1994. A Measure of Standing for Citation Networks Within a Wider Environment. *Information Processing and Management* 30:21-31.

Given a journal-to-journal citation matrix, it is straightforward to construct measures of relative standing for the journals in the citation network. The methodology is completely portable and can be used for citation networks where the units are national scientific communities. The new application points to the need to have a measure of standing that takes a wider citation environment into account. A new measure of standing that does this is proposed. The new measure imposes no additional computational burden, making it prudent to use the measure for any citation matrix.

Doreian, Patrick, Vladimir Batagelj and

Anuska Ferligoj. 1994. Partitioning Networks Based on Generalized Concepts of Equivalence. *Journal of Mathematical Sociology* 19:1-27.

The idea of partitioning a network in terms of a specific conceptualization of equivalence has taken powerful hold on the imagination of network analysts. Frequently, an empirically established blockmodel is assessed in terms of its consistency with a particular visualization of a network. We demonstrate while a visual representation of a network can be helpful, this also constrains powerfully our image of the structure of that network. This implies that a particular picture of a network is not sufficient establishing the adequacy of a blockmodel. We argue that once committed to a specific form of equivalence, a network analyst must be committed also to an explicit method of assessing the extent to which a blockmodel is consistent with the selected form of equivalence. We provide a method for doing this. Additionally, and perhaps more importantly, efforts to measure the fit of a blockmodel in terms of a single form of equivalence reveal a serious weakness in the idea of using only a single form of equivalence to partition a network. It follows that this idea must be reconsidered. An appropriate generalization of the equivalence idea is one where each block, of a particular image in a blockmodel, is free to conform to a different form of equivalence. We provide a general criterion function, together with a local optimization procedure, for establishing such a generalized blockmodel. This criterion function also provides an appropriate measure of fit. Finally, we propose partitioning a network into a generalized blockmodel where each block, again in an image, can also have a particular pattern within which each equivalence type is a special case. Again, we provide a method for establishing such a model and assessing its fit.

Dorean, Patrick and Katherine L.

Woodard. 1992. Fixed Lists vs. Snowball Selection of Social Networks. *Social Science Research* 21:216-233.

Discussion of two methods for collecting network data: fixed lists versus snowball selection. It is found that the methods are fundamentally different, especially when data are gathered at multiple points in time. Snowball selection can respond better to changes than fixed lists.

Dow, Malcolm M. 1993. Saving the Theory: On Chi-Square Tests With Cross-Cultural Survey Data. *Cross-Cultural Research* 27:247-276.

Using data from three well-known cross-cultural survey data sets that differ in size and geographical scope, this article examines the effects of spatial and/or cultural clustering of societies on the usual chi-square test of independence. Sample design effects for individual variables and for two-way contingency tables from all three data sets were found to be generally larger than unity, often considerably so, suggesting that the associated chi-square test statistic variances are considerably underestimated and that the risk of Type I errors is considerably greater than the 5% level usually assumed by researchers. This is especially true if variable categories have been collapsed to overcome small cell counts, a common occurrence in comparative research. These empirical findings imply that using chi-square tests with categorical variables from cross-cultural survey data sets is a relatively easy way to generate an excess of statistically significant results, thus increasing the likelihood of "saving the theory." The results also strongly suggest that the extensive reporting of naive chi-square independence tests using cross-cultural data sets over the past several decades has led to incorrect rejection of null hypotheses at levels much higher than the expected 5% rate. A reanalysis of

chi-square-based inferences from a previously published study also supports this conclusion. A deflation factor is proposed for observed chi-squares that reduces the Type I error rates closer to the assumed levels.

Doyle, Anna Beth, Dorothy Markiewicz and Cindy Hardy. 1994. Mothers' and Children's Friendships: Intergenerational Associations. *Journal of Social and Personal Relationships* 11:363-377.

We assessed predictability of the friendship participation and quality, as well as the popularity, of 154 children 8 to 12 years of age from measures of their mothers' social relationships. Measures included questionnaires assessing qualities of the mothers' best friendships and the quality of the marital relationship, and an interview measure of maternal acceptance of the child. Results indicated that qualities of the mothers' best friendship, in particular self-referent reward qualities, significantly predicted child friendship participation, the closeness and helpfulness of children's friendships, child popularity and maternal acceptance. Marital status was an important predictor, and marital quality a lesser predictor, of child friendship quality but not of popularity. Results suggest domain-specific parental influences on children's friendships which are distinct from peer popularity.

Duck, Steve, Kris Pond and Geoff Leatham. 1994. Loneliness and the Evaluation of Relational Events. *Journal of Social and Personal Relationships* 11:253-276.

If loneliness inclines people to a general hostility towards others and to a disparaging style about social interaction, then the style should appear in studies of lonely people interacting with their friends, as well as observing other persons they do not know. We conducted a study with 4 features; it compared (a) lonely and non-lonely persons' evaluation

of (b) their own and other people's conversations with friends, using (c) both free evaluation and videotape-prompted evaluation (d) both immediately after the interaction and 6 weeks later. Lonely persons did not consistently evaluate their or others' conversations negatively, though they tended to rate communication quality lower. They did, however, draw negative global conclusions about their own relationships, especially after reviewing a videotape of their own interaction 6 weeks later. We conjecture that lonely people are negative about interactions when they focus on their own communicative performance, and that they also have characteristic ways of evaluating and generalizing from their own interactions that feed into general patterns of dissatisfaction with their own social performance in relationships as a whole.

Duncan, Marie T. and David L. Morgan. 1994. Sharing the Caring: Family Caregivers' Views of Their Relationships with Nursing Home Staff. *The Gerontologist* 34:235-244.

Using data from focus groups and individual interviews with family caregivers who had a spouse or a parent with Alzheimer's disease, we examined their reports of interactions with staff in formal care settings. Families most often discussed nurses' aides; they emphasized their desire for an ongoing relationship with staff members; and, they interpreted staff behaviors in terms of high-quality care that was based on the social and emotional care given to their resident as much as on the technical tasks involved in caring for them. These results point to the families' desire for emotionally sensitive care and not just for technically competent performance of tasks.

Dwyer, Jeffrey, Gary R. Lee, and Thomas B. Jankowski. 1994. Reciprocity, Elder Satisfaction, and Caregiver Stress and Burden: The Exchange of Aid in the Family

Caregiving Relationship. *Journal of Marriage and the Family* 56:35-44.

In this exploratory research we propose a theoretical model and estimate a system of equations in which an impaired mother's reciprocation of assistance provided by a caregiving daughter simultaneously influences the satisfaction of the elder and the stress and burden of the caregiver. The results indicate that, consistent with some previous research, reciprocity does not directly or indirectly affect the satisfaction of older women. Conversely, reciprocity does significantly reduce the stress and burden experienced by caregiving daughters.

Emirbayer, Mustafa and Jeff Goodwin. 1994. Network Analysis, Culture, and the Problem of Agency. *American Journal of Sociology* 99:1411-54.

Network analysis is one of the most promising currents in sociological research, and yet it has never been subjected to a theoretically informed assessment and critique. This article outlines the theoretical presuppositions of network analysis. It also distinguishes between three different (implicit) models in the network literature of the interrelations of social structure, culture, and human agency. It concludes that only a strategy for historical explanation that synthesizes social structural and cultural analysis can adequately explain the formation, reproduction, and transformation of networks themselves. The article sketches the broad contours of such a theoretical synthesis in the conclusion.

Engelstad, Per H. and Bjørn Gustavsen. 1993. Swedish Network Development for Implementing National Work Reform Strategy. *Human Relations* 46:219-248.

During the early history of action research it was common to work with one single enterprise or workplace. More recently there

has been a tendency toward linking organizations together in networks of development projects. One of the chief reasons for this new approach is to achieve "critical mass" of changes between organizations. In creating networks, different approaches can be applied. While the first efforts to develop networks were seen as appendices to single case projects, the current tendency is to see networks as organizational structures in their own right. Their development requires means or action parameters which go beyond those generally applied in "organization development." Networks were a key means in a recently concluded 5-year, nationwide action research-based Swedish work reform effort involving more than 100 organizations in various networks (the "LOM" program). This article describes the LOM program and the background for the interest in network development, the means invented to create and develop the necessary networks, the role of action research, and the resulting perspective on networks that emerged.

Everett, Martin G. and Stephen P. Borgatti. 1994. Regular Equivalence: General Theory. *Journal of Mathematical Sociology* 19:29-52.

The theory of regular equivalence has advanced over the last 15 years on a number of different fronts. Notation and terminology have developed often making it difficult to obtain a coherent view of the area as a whole. This paper attempts to provide a framework in which to develop and explore the general mathematical theory of regular equivalence and to place a number of the more important results into that framework

Fararo, Thomas J., John Skvoretz, and Kenji Kosaka. 1994. Advances in E-State Structuralism: Further Studies in Dominance Structure Formation. *Social Networks* 16:233-265.

E-state structuralism is a theoretical method that analyzes the formation and dissolution of network ties by merging the abstract core of expectation states theory with social network analysis. The method has been used to model dominance structure formation in infra-human populations. The work reported in this paper retains the specific problem focus on dominance while generalizing E-state structuralism in two directions. First, we incorporate potential parallelism in attack processes, and second, we allow for non-complementarity in the formation of orientational dominance/deference E-states. We analyze the effects of both these generalizations on the developments of stable forms of dominance structures. We find that under the more general assumptions, stable structures include various forms of coalitions in addition to the usual cycles and hierarchies. We view this generalized version of E-state structuralism as suggestive of ways to model the development of social structure in both infra-human and human populations.

Favell, Adrian. 1993. James Coleman: Social Theorist and Moral Philosopher? *American Journal of Sociology* 99: 590-613.

The reception of James Coleman's monumental recent work *Foundations of Social Theory* has to date been narrowly technical in scope. This article seeks to redress this by offering a broader, philosophical reading of Coleman's work, one that brings out the full breadth of his intentions. It considers his account of the failings of contemporary political and moral philosophy and his own theory of rights, the self, and corporate structures in society. It goes on to discuss the limits of a comprehensive rational choice theory and the viability of Coleman's aspiration to found a positive social theory that can be at the heart of reflections on institutional reform and policy-making.

Fernandez, Roberto M. and David Harris.

1993. Gender, Class, and Social Isolation. In *Poverty, Race and Inequality*. Center for Urban Affairs: Northwestern University.

This paper examines whether there is empirical support for Wilson's (1987) social isolation hypothesis. In our past work (Fernandez and Harris 1992), we drew on theoretical constructs in the field of network analysis, and defined three dimensions of social isolation--isolation from institutions, structure of personal networks, and the composition of personal networks--and developed 14 measures for these dimensions. Using the Urban Family Life Survey, we found inconsistent support for class differences of the kinds predicted by Wilson for isolation from institutions, mixed support for network structure, especially for females, and stronger support for network composition.

In this paper, we ask whether alternative processes that affect network structure and composition explain the class and gender differences in social isolation. We find mixed support for Wilson's hypothesis. We find that controlling for alternative explanations of class differences fully accounts for class differences in personal network volume. Introducing controls was less successful in accounting for class differences in two of the three measures of network composition. Class differences in network structure are accounted for by other variables, but the network composition measures show statistically reliable and substantively important class differences: non-working poor remain isolated from access to employed people, and have friends who are disproportionately concentrated among those who are on public aid. Moreover, the gender-class interaction we uncovered in our last paper is also accounted for by the alternative explanations. We conclude by discussing the policy implications of these results.

Fernandez, Roberto M. and Judith A.

Levine. 1994. Different from Whom? Diversity and Organizational Commitment in a Manufacturing Plant. Center for Urban Affairs: Northwestern University.

We ask how demographic differences in "vertical" comparisons to superiors and "horizontal" comparisons to co-workers translate into organizational commitment. We posit that the effects of demographic difference will be felt most strongly on judgments of the more socially proximate entities of supervisors and co-workers, and that much of the effect of relational demography on organizational commitment will be filtered by experiences with superiors and co-workers. We test these arguments using data from a case study of a single manufacturing plant of a Fortune 100 company.

We find only weak evidence that demographic comparisons with bosses translate into organizational commitment, but stronger evidence for coworkers. Race, gender, and age composition of work groups are related to organizational commitment. However, the effects of race and gender work group composition on organizational commitment seem to be mediated by job experiences, not feelings for co-workers. People appear to blame their lack of demographic fit with the work group, not on coworkers or bosses, but on the organization as a whole.

Frank, Ove and Tom Snijders. 1994. Estimating the Size of Hidden Populations Using Snowball Sampling. *Journal of Official Statistics* 53-67.

Snowball sampling is a term used for sampling procedures that allow the sampled units to provide information not only about themselves but also about other units. This might be advantageous when rare properties are of interest. This article illustrates snowball sample situations and discusses various

modeling and estimation problems in this context. The problem of estimating the size of a population is discussed for both design-based and model-based approaches. An application to a study of heroin use is included. Simulation results are provided for comparing and evaluating various estimators.

Galaskiewicz, Joseph and Stanley Wasserman. 1993. Social Network Analysis: Concepts, Methodology, and Directions for the 1990's. *Sociological Methods and Research* 22:3-22.

Network analysis has been used extensively in sociology over the last twenty years. This special issue of *Sociological Methods & Research* reviews the substantive contributions that network analysis has made to five areas: political sociology, interorganizational relations, social support, social influence, and epidemiology. To introduce the novice to current developments in the field, this introductory article presents an overview of the key concepts and methods which are popular among sociologists and which have been used to advance knowledge in these substantive areas. Remaining articles are also discussed briefly, with speculations offered on some of the more promising avenues of inquiry recently under exploration.

Gallagher, Sally K. 1994. Doing Their Share: Comparing Patterns of Help Given by Older and Younger Adults. *Journal of Marriage and the Family* 56:567-578.

This article compares the help older people give to family, friends, and others with patterns of help given by younger adults. The analysis is based on in-depth personal interviews with 273 married men and women. Older adults are less involved in helping kin - particularly less proximate kin - and friends. However, older adults spend more time volunteering - especially to help the needy - than do younger adults. Gender is also a

significant and consistent predictor of giving care across types of recipients. Helping kin and helping friends are positively associated, as are helping friends and volunteering.

Gallant, Mary J. and Jay E. Cross. 1993. Wayward Puritans in the Ivory Tower: Collective Aspects Of Gender Discrimination In Academia. *The Sociological Quarterly* 34:237-256.

The problematic in how women experience their work worlds today is eclipsed by glossy images of a mythical liberated woman catapulted to instant glory by an increasingly enlightened division of labour. Women in the professions have been used predominantly to portray this visionary image of our times while reported instances of gender discrimination have been downplayed. This lapse in understanding amounts to a compromise of trust in institutional life. Gender discrimination is now treated as a limited issue determinable by character or chemistry, and amendable in terms of assigning innocence or blame to individuals. Such a construal ignores the processual and emergent nature of social interaction and how organizations themselves contribute to the problem. This paper is an attempt to redefine gender discrimination as a collective level process and to suggest an archetype based on case study evidence.

Garson, G.D. 1991. A Comparison of Neural Network and Expert Systems Algorithms with Common Multivariate Procedures for Analysis of Social Science Data. *Social Science Computer Review* 9:399-434.

Comparison of expert systems and neural network approaches with multivariate analysis methods. Methods compared are the ID3 algorithm of expert systems, the back-propagation algorithm of neural networks, multiple linear regression, including effects analysis, path analysis, and discriminant

analysis.

Garton, Laura and Barry Wellman. 1994. Social Impacts of Electronic Mail in Organizations: A Review of the Research Literature. *Communication Yearbook* 18, Forthcoming.

E-mail is a communication network operating on a computer network that supports social networks. It combines locational flexibility, rapid transmission to multiple others across time and space, and the ability to store and process information. We review research into how e-mail shapes -- and is shaped by -- organizational structures and processes. Although social phenomena strongly affect the use of e-mail, many discussions of media use have treated it as a voluntary, individual act of matching task to media. They have paid less attention to the influence of organizational power, group perceptions, and social network relations. E-mail provides fewer cues than FTF communication about interactions, physical context or social roles. As this fosters status equalization, there is less awareness of group members' expertise, organizational niche and power, or ascribed characteristics. People are more uninhibited, non-conformist and conflictual when using e-mail; groups are more polarized and take longer to reach consensus. However, groups using e-mail tend to produce more diverse opinions and better decisions. E-mail increases access to new people; weakens spatial, temporal and status barriers; and provides access to information that would otherwise be unavailable. When people communicate electronically, work groups become more fluid. People can participate actively in more groups, and those on the periphery get more involved.

Hare, A. Paul. 1994. Types of Roles in Small Groups: A Bit of History and a Current Perspective. *Small Group Research* 25:433-448.

The types of roles played by members of small groups have been described from a number of different perspectives. Most of the research has been based on laboratory or therapy-like groups in their "task-oriented" phase, after the overall purpose of the group has been given, resources supplied, and basic formal roles indicated. Informal roles tend to develop as a response to the set of formal roles. They may provide additional activities necessary for effective group functioning or they may be in opposition to the formal roles. Little attention has been paid to groups beginning *de novo*. However roles are described, they must be placed, eventually, along with other concepts in a comprehensive social-psychological theory. As an illustration, several category systems, derived from different social-psychological perspectives, can be used to describe the form and content of formal, informal and dramaturgical roles in small groups.

Hays-Mitchell, M. 1993. The Ties that Bind: Informal and Formal Sector Linkages in Streetvending: the Case of Peru's Ambulantes. *Environment and Planning (UK)* 25:1085-1102.

The nature of the various and diverse linkages that bind informal traders in Peru to the institutional, economic, and social contexts in which they work and live is described and analyzed here. Ground-level scrutiny is related to broad-based processes occurring at the national and international scales; the importance of integrating contextual information into broader analytical conceptualizations is stressed. It is emphasized that informal activities and relationships in an indigenous-based community such as Peru do not operate according to clearly delineated conceptualization, such as the Northern-based dichotomization of production and reproduction processes. Instead, they integrate these processes at various scales and among various activities. In street vending, for

example, production and reproduction (that is, workforce and household experiences) converge at the intraurban scale through the use of both the home and the workplace for related, and frequently indistinguishable, activities. As they earn their livings, street vendors simultaneously extend the terrain of production activities into their homes and reproduction activities into their workplaces -- in this instance, public spaces such as city streets.

Hedström, Peter. 1994. Contagious Collectivities: On the Spatial Diffusion of Swedish Trade Unions, 1890-1940. *American Journal of Sociology* 99:1157-1179.

This article analyzes how distances and relations between actors are likely to influence the growth and spread of social movements. A formal theoretical model is developed that extends previous work on threshold models of collective behavior. Spatial distribution of a population influences the networks that are likely to emerge within the population; these networks, in turn, will influence the likely outcome of a mobilization effort. Key theoretical predictions are tested using data on the founding of local union organizations in Sweden, 1890-1940. The empirical analyses show that contagious spatial processes were of considerable importance for the growth of the Swedish union movement, thus supporting the theoretical argument. The analyses presented in the article provide an alternative interpretation of density-dependent founding rates to the one offered by organizational ecologists.

Helbing, Dirk. 1994. A Mathematical Model for the Behavior of Individuals in a Social Field. *Journal of Mathematical Sociology* 19:189-219.

Related to an idea of Lewin, a mathematical model for behavioral changes under the influence of a social field is developed. The

social field reflects public opinion, social norms and trends. It is not only given by external factors (the environment) but also by the interactions of individuals. Two important kinds of interaction processes are distinguished: imitative and avoidance processes. Variations of individual behavior are taken into account by "diffusion coefficients."

Herzog, Henry W., Jr., Alan M. Schlottmann, and Thomas P. Boehm. 1993. Migration as Spatial Job-Search: A Survey of Empirical Findings. *Regional Studies* 27:327-340.

For this analysis of labor migration as spatial job search, the method undertaken involves a survey of multivariate empirical findings relative to the following: (1) the impact of personal unemployment on migration, and (2) the subsequent effect of migration on reemployment. Of overriding concern throughout is the issue of migration (labor market) efficiency, and what previous research considered under items (1) and (2) above has to say in this regard. A virtually unanimous finding is that personal unemployment significantly augments migration likelihood. Although pervasive, this effect varies in magnitude across industrial nations and subgroups of the population by race, sex, occupation, prior geographic mobility, and nativity. In addition, the stimulative effect of joblessness on migration decreases with search duration, and increases with mean distance of potential moves, union membership, and severity of cyclical downturns within a particular local labor market. Based on the robustness of these findings, labor migration appears to be microefficient with regard to personal unemployment. Although not overwhelming, empirical evidence suggests that out-migration in the United States is also augmented by higher area unemployment rates, especially for the unemployed.

Howes, Carolle, Kristin Droege and Catherine C. Matheson. 1994. Play and Communicative Processes Within Long and Short Term Friendship Dyads. *Journal of Social and Personal Relationships* 11:401-410.

Twenty-four dyads of four-year-old children participated in this study. Six of the dyads were long-term friends (children who had been friends for three years), twelve dyads were short-term friends (friendships formed within the previous six months) and six of the dyads were never-friends. Children's joint play and communications were coded from videotapes. Dyads who more often used communicative behaviors to extend and clarify play also more often played in more complex ways. Long-term friendship dyads were more likely to use communicative behaviors that extended play and to play in a more complex way than either of the other two dyad types.

Johnson, Colleen L. and Lillian E. Troll. 1994. Constraints and Facilitators to Friendships in Late Late Life. *The Gerontologist* 34:79-87.

This report analyzes friendship patterns of individuals 85 and older, 77% of whom are women. Despite high levels of disability and the loss of age peers, the majority were in frequent contact with friends and still had a close friend. Over 31 months, however, the predictors of friendship involvement changed. At Time 1, mood was most important, but by Time 3, increased disability was most important. Qualitative data describe how the constraints and facilitators lead to changing criteria for friendships in late late life.

Kanfer, Alaina and J. S. Tanaka. 1993. Unraveling the Web of Personality Judgements: The Influence of Social Networks on Personality Assessment. *Journal of Personality* 61:711-738.

Contemporary assessment models have focused on the degree to which self- and other reports of personality description agree in an effort to define consensus and agreement about personality attributes. In general, we believe that analyses of this type of data have been limited in that they tend to focus on both simple models (usually dyad-based) and simple aggregations of data (usually correlations between self- and other ratings). In addition, the behaviors used as stimuli in experimental settings lack the richness of behaviors in natural social settings. Here, we present some ideas from social network models in an effort to influence broader conceptualizations of agreement and consensus in assessment. Social network models provide a more complete description of interpersonal behavior beyond the dyadic level in both laboratory and natural settings. After defining some basic social network concepts, we go on to suggest the applicability of these concepts to personality assessment and, more specifically, to how these models might be used to study self-other agreement and consensus about personality judgements. Empirical data are used to illustrate social network concepts in the domain of personality assessment.

Keelan, J. Patrick R., Kenneth L. Dion and Karen K. Dion. 1994. Attachment Style and Heterosexual Relationships Among Young Adults: A Short-Term Panel Study. *Journal of Social and Personal Relationships* 11:201-214.

We investigated whether the relationship advantages reported for individuals with a secure attachment style persisted over a 4-month time period. The temporal stability of two self-report measures of attachment style was also investigated. 'Secures' reported consistent levels of relationship satisfaction, relationship costs, relationship commitment, trust for their partners. 'Insecures' (i.e. avoidants and anxious/ ambivalents) reported

decreasing levels of satisfaction, commitment and trust along with increasing relationship costs. Insecurely attached individuals from ended relationships characterized their relationships more negatively than insecures from intact relationships. Both self-report measures of attachment style were characterized by considerable short-term temporal stability.

Kerns, Kathryn A. 1994. Longitudinal Examination of Links Between Mother-Child Attachment and Children's Friendship in Early Childhood. *Journal of Social and Personal Relationships* 11: 379-381.

A longitudinal study examined associations between child-mother attachment security and children's friendship at two points in early childhood. Comparisons of secure-secure and secure-insecure friend pairs revealed that the interactions of secure-secure pairs were more positive at age 4 and more positive and coordinated at age 5.

Kiers, Henk A. L. and Yoshio Takane. 1994. A Generalization of GIPSCAL for the Analysis of Nonsymmetric Data. *Journal of Classification* 11:79-99.

Graphical representation of nonsymmetric relationships data has usually proceeded via separate displays for the symmetric and the skew-symmetric parts of a data matrix. DEDICOM avoids splitting the data into symmetric and skew symmetric parts, but lacks a graphical representation of the results. Chino's GIPSCAL combines features of both models, but may have a poor goodness-of-fit compared to DEDICOM. We simplify and generalize Chino's method in such a way that it fits the data better. We develop an alternating least squares algorithm for the resulting method, called Generalized GIPSCAL, and adjust it to handle GIPSCAL as well. In addition, we show that Generalized

GIPSCAL is a constrained variant of DEDICOM and derive necessary and sufficient conditions for equivalence of the two models. Because these conditions are rather mild, we expect that in many practical cases DEDICOM and Generalized GIPSCAL are (nearly) equivalent, and hence that the graphical representation from Generalized GIPSCAL can be used to display the DEDICOM results graphically. Such a representation is given for an illustration. Finally, we show Generalized GIPSCAL to be a generalization of another method for joint representation of the symmetric and skew-symmetric parts of a data matrix.

Klovdahl, Alden S., Alexis Ferrand and Lise Mournier. 1994. Une Petite Pré-Enquête: The Challenge of Social Network Research in France. *Bulletin de Méthodologie Sociologique* 43:74-90.

Une petite pré-enquête: le défilé de la recherche sur les réseaux sociaux en France. Une étude exploratoire a été réalisée à Reims et Paris afin de tester la faisabilité d'obtenir des données nominatives (noms et adresses) pour reconstruire les réseaux sociaux qui connectent les individus dans une société. Deux types de résistance ont été rencontrés: d'abord, une réeststance bien connue à participer à une enquête, ensuite une hésitation à fournir des informations nominatives. Une évaluation de cette étude exploratoire permet de faire des suggestions sur la manière de réaliser des enquêtes sur les réseaux sociaux en France.

A small exploratory study was carried out in two areas of France (Paris and Reims) to test the feasibility of obtaining nominative data (names and addresses) needed to reconstruct the large social networks that connect individuals in modern society. In carrying out the study two kinds of 'resistance' were encountered: firstly a reluctance to participate in surveys in general: and secondly a

hesitation among those who did participate to provide information. An evaluation of the exploratory study leads to suggestions for future research on social networks in France.

Knoke, David. 1993. Networks of Elite Structure and Decision Making. *Sociological Methods and Research* 22:23-45.

Recent research on community power structures and national political elites increasingly incorporates social network concepts, principles, and methodologies. Analysts using this perspective seek to uncover the various mechanisms underlying the cleavages and coalitions among state managers, political parties, corporations, interest groups, social movements, mass publics, class segments, and other social formations. By combining reputational, positional, and decision-making measures, researchers delineate the networks of communication ties and resource exchanges, which shape collective actions that attempt to influence the outcomes of political controversies. This article critically reviews recent power structure research that applies network techniques to the analysis of elite structures and decision making. Specifically, the following topics are examined: the specification of political network content, the delineation of political elite system boundaries, the identification of key or core actors, the representation of network structures, elite actors' individual and collective participation in policy events, the determination of policy event outcomes, and future directions for elite research using network perspectives.

Knoke, David and Arne L. Kalleberg. 1994. Job Training in U.S. Organizations. *American Sociological Review* 59:537-546.

We draw hypotheses about the factors related to company provision of formal job training programs from diverse theoretical perspectives

and research findings. Using data from the 1991 National Organization Survey, we analyze a sample of 688 establishments to estimate multivariate models. The relationships between employer-provided job training and organizational size, unionization, and workforce composition are reduced or eliminated in most multivariate equations. Employer-provided training is most extensive in establishments with elaborate internal structures that operate in complex market environments.

Langton, Nancy and Jeffery Pfeffer. 1994. Paying the Professor: Sources of Salary Variation in Academic Labor Markets.

Lee, G. R., J. K. Netzer, and R. T. Coward. 1994. Filial Responsibility Expectations and Patterns of Intergenerational Assistance. *Journal of Marriage and the Family* 56:559-565.

This study tests the association between two dimensions of the theory of intergenerational solidarity (Bengtson & Roberts, 1991) filial responsibility expectations (a component of normative solidarity) and functional solidarity on a sample of 387 elderly parents. Filial responsibility expectations are defined as the extent to which adult children are believed to be obligated to support their aging parents. Functional solidarity is measured by aid given by aging parents to their adult children, and aid received by parents from children. Aging parents' filial responsibility expectations are positively related to the amount of aid they give to their children when parental resource variables are controlled, but unrelated to aid received from children.

Lee, Yean-Ju, William L. Parish and Robert J. Willis. 1994. Sons, Daughters, and Intergenerational Support in Taiwan. *Amer. Journal of Sociology* 99:1010-1041.

This study focuses on married children's

***American Sociological Review* 59:236-256.**

Using a set of 58 academic fields as distinct labor markets we examined the extent of wage variation within markets. The degree to which wages vary is an indicator of market efficiency and of whether a market wage exists. Holding constant differences in human capital, we found that the degree of wage variation in an academic labor market is negatively related to mobility within that market and positively related to the oversupply of labor. We also found that as wage variation increases, male-female wage differentials also increase.

financial support for their parents in Taiwan. It is often assumed that economic and social changes accompanying industrialization will drastically weaken parental power and thus reduce the support from adult children to parents. The data in this article, however, show that the vast majority of married children, both sons and daughters, provided net financial support for their parents during the previous year. The socioeconomic characteristics of the parents and children in the families where financial transfers occurred indicate that the altruism/corporate group model best portrays intergenerational transactions during the period of rapid economic growth.

Levin, Morten. 1993. Creating Networks for Rural Economic Development in Rural Norway. *Human Relations* 46:193-218.

Regional economic development is a social change process. This paper focuses on how the creation of social networks can support economic development. Action research methodology, the theoretical foundations of which are presented, was used to support network development. The paper describes and analyzes the social shaping of several types of new networks in coastal Norway over

the 5-year period of 1986-1991. Networks linking entrepreneurs resulted in establishing several new enterprises. The shaping of networks for inter organizational cooperation promoted the survival and growth of existing economic activity. Networks that developed between the public and private sectors also promoted economic development and a new role for the public sector, network broker, emerged. This new role required public sector initiatives, provision of necessary resources, and active and equal participation among all parties involved in the development effort.

Lowery, David and Virginia Gray. 1994. The Nationalization of State Interest Group System Density and Diversity. *Social Science Quarterly* 75:

The authors replicate and extend their previous cross-sectional findings on state interest group system density and diversity by demonstrating that their models are useful in understanding change in diversity and density over time. In addition to developing and testing change score analogs of the models, the incorporate into each a homeostatic change process. The results not only support the core of the models but suggest that the unusually rapid growth in the number of groups over this period rendered state interest group systems far more homogeneous in terms of their responsiveness to the variables identified in the previous models.

Marsden, Peter V. and Noah Friedkin. 1993. Network Studies of Social Influence. *Sociological Methods and Research* 22:127-151.

Network analysts interested in social influence examine the social foundations for influence - the social relations that provide a basis for the alteration of an attitude or behavior by one network actor in response to another. This article contrasts two empirical accounts of social influence (structural cohesion and

equivalence) and describes the social processes (e.g., identification, competition, and authority) presumed to undergird them. It then reviews mathematical models of influence processes involving networks and related statistical models used in data analysis. Particular attention is given to the "network effects" model. A number of empirical studies of social influence are reviewed. The article concludes by identifying several problems of specification, research design, and measurement and suggesting some research that would help to resolve these problems.

Maryanski, Alexandra. 1994. The Pursuit of Human Nature in Sociobiology and Evolutionary Sociology. *Sociological Perspectives* 37:375-389.

Outside of sociology, evolutionary theory is once again commanding widespread attention in social science. Having sat out the spirited debates over sociobiology in the 1970s, most sociologists are largely unaware that the field has prospered and is now a respected, interdisciplinary science with a growing number of influential scholars within the social sciences. This article takes a critical look at sociobiology with a consideration of both its historical origins and its now modified theoretical stance, which is exemplified by Timothy Crippen's article "Toward a Neo-Darwinian Sociology." In addition, this essay summarizes an alternative approach that might be called "evolutionary sociology." While it also incorporates the Modern Synthesis, it uses established sociological methods and theory, along with primate data and the fossil and archaeological records, to consider the biological legacy of humankind.

McAdam, Doug and Ronnelle Paulsen. 1993. Specifying the Relationship between Social Ties and Activism. *American Journal of Sociology* 99: 640-667.

Much empirical work in the social-movements literature has focused on the role of social ties in movement recruitment. Yet these studies have been plagued by a troubling theoretical and empirical imprecision. This imprecision stems from three sources. First, these studies are generally silent on the basic sociological dynamics that account for the reported findings. Second, movement scholars have generally failed to specify and test the precise dimensions of social ties that seem to account for their effects. Finally, most studies fail to acknowledge that individuals are embedded in many relationships that may expose the individual to conflicting pressures. This article seeks to address these shortcomings by means of an elaborated model of recruitment that is then used as a basis for examining the role of social ties in mediating individual recruitment to the 1964 Mississippi Freedom Summer Project.

Meyer, Gordon W. 1994. Social Information Processing and Social Networks: A Test of Social Influence Mechanisms. *Human Relations* 47:1013-1048.

After identifying the implicit assumptions about social influence mechanisms and the social structural bases reflected in the social information processing literature, social network analysis concepts and structural models are used to clearly specify three alternative influence mechanisms. Simple interaction contact, norm enforcing cohesive groups, and the occupation of structurally equivalent positions or roles in an interaction structure are hypothesized as the structures underlying different social influence processes. The relative efficacy of these various structural configurations in predicting similarity of perception of and attitudes about organizational phenomena are then evaluated. While the evidence seems to indicate that the social influence of norm enforcing groups is most robust, multiple mechanisms appear to operate, sometimes simultaneously, for

different kinds of perceptions. The limits of social information processing effects are discussed in light of the findings here of no significant effects on some perceptions.

Michener, H. Andrew and Wing Tung Au. 1992. A Probabilistic Theory of Coalition Formation in n -Person Sidepayment Games. *Journal of Mathematical Sociology* 19:165-188.

This paper describes the central-union theory, which offers a new approach to the formation of coalition structures in cooperative, sidepayment, super-additive n -person games. This theory treats formation of coalition structures as a probabilistic, endogenous process. Fundamental to this process is the new concept of coalition structure candidate set. For any given coalition structure, the predicted probability of formation is a function of two variables: (1) whether the coalition structure is a member of the coalition structure candidate set (coalition structures not in the candidate set will not form) and (2) the extent to which players accept that coalition structure. Players' acceptance, in turn, depends on differences among players in the level of satisfaction regarding the allocation of payoffs within the coalition structure.

Mizruchi, Mark S. and Joseph Galaskiewicz. 1993. Networks of Interorganizational Relations. *Sociological Methods and Research* 22:46-70.

Network analysis has been used extensively in the study of interorganizational relations. This article reviews the literature over the past fifteen years and organizes it into three theoretical traditions: the resource dependence model, the social class framework and the institutional model. It is shown that network methods have enabled researchers to describe phenomena, such as interorganizational fields, that were previously inaccessible. It is also shown how social networks help to explain the

formation of interorganizational ties and how interorganizational relations, conceptualized as social networks, can explain organizational power as well as the strategies decision makers pursue.

Moaddel, Mansoor. 1994. Political Conflict in the World Economy: A Cross-National Analysis of Modernization and World-System Theories. *American Sociological Review* 59:276-303.

Explanations for the high levels of political instability and conflict among less developed countries relative to developed countries hinge on the question of whether political conflict results from internal domestic processes or external international relations. Modernization theory asserts that the destabilizing effects of industrialization on domestic institutions and actors generate political conflict in an inverted-U relationship. World system theory argues that conflict increases in less developed countries when they become peripheral in the international division of labor. I use structural modeling (LISREL) to evaluate these hypotheses cross-nationally for the years 1970 through 1981. The results fail to support the curvilinear modernization model and show peripheralization to contribute to political conflict only indirectly through related increases in income inequality and vulnerability to the destabilizing effects of the world economy. Combining the two models and taking into account economic growth and ethnic separatism the effects of peripheralization on political conflict are indirect mediated by vulnerability and income inequality. The effects of modernization on political conflict are linear and indirect mediated by income inequality and regime repressiveness. Both peripheralization and modernization contribute to political conflict through their effects on domestic economic conditions social stratification and state structure.

Molm, Linda D. 1994. Is Punishment Effective? Coercive Strategies in Social Exchange. *Social Psychology Quarterly* 57:75-94.

This research tests competing predictions about the effectiveness of coercive strategies in social exchange. Both the classical exchange theories and most bargaining theories argue that the actual use of punishment in exchange relations provokes hostility and retaliation, and leads to a decrease rather than an increase in mutually rewarding exchange. I argue instead that more frequent use of contingent punishment would increase the effectiveness of punishment power. Although the motivation to minimize loss constrains the use of punishment, that motivation should make it highly effective when used. An experiment tested these predictions, using computer-simulated actors who were programmed to employ varying levels of contingent punishment, under different structures of punishment power, against a partner with a reward power advantage. In support of my predictions, more frequent punishment for nonexchange increased the partner's reward exchange without increasing retaliation or negative affect. Punishment that was both strong and consistent produced the highest frequency of reward exchange and the least negative affect toward the partner.

Molm, Linda D, Theron M. Quist, and Phillip A. Wiseley. 1994. Imbalanced Structures, Unfair Strategies: Power and Justice in Social Exchange. *American Sociological Review* 59:98-121.

We investigate how the balance of power in exchange relations affects actors' perceptions of the fairness of their partners' power strategies. If justice is in the eye of the beholder, as virtually all social psychological theories of justice assume, does its subjective nature work to the advantage of the powerful

or the weak? Alternative perspectives on justice and power suggest competing hypotheses. One view proposes that norms of justice support and legitimate behavioral inequalities that favor the powerful; the second view argues that norms of justice counter and oppose the effects of power. Using an experimental design that allows us to manipulate structural power and behavioral strategies independently, we test hypotheses derived from these competing theories in relations of direct, non negotiated exchange. We find no evidence for an opposing effect of justice and substantial support for a legitimating effect. Most significantly, punishment strategies are perceived as more fair when used by exchange partners who are advantaged on reward power than when used by disadvantaged partners.

Montgomery, James D. 1994. Weak Ties, Employment, and Inequality: An Equilibrium Analysis. *American Journal of Sociology* 99:1212-36.

This article adds a simple social structure and pattern of social interaction to a Markov model of employment transitions. In the model, society is composed of many small (two-person) groups. Unemployed individuals find jobs through strong ties (intragroup social interaction), weak ties (random intergroup interaction), and formal channels. Holding constant the total level of social interaction, the author examines how a change in the composition of social interaction affects the steady-state equilibrium. An increase in weak-tie interactions reduces inequality, thereby creating a more equitable distribution of employment across groups. Moreover, an increase in weak-tie interactions increases the steady-state employment rate if inbreeding by employment status among weak ties is sufficiently low.

Moore, Carmella C. and A. Kimball Romney. 1994. Material Culture, Geo-

graphic Propinquity, and Linguistic Affiliation on the North Coast of New Guinea: A Reanalysis of Welsch, Terrell, and Nadolski (1992). *American Anthropologist* 96:370-396.

Welsch et al. (1992) study the frequency of occurrence of 47 artifact types across 31 villages on the North Coast of New Guinea. They find variation in assemblages of material culture to be associated with geographic propinquity only, with linguistic relations having virtually no effect. Our reanalysis, which suggests that language and propinquity have equally strong effects, has important theoretical implications for the study of culture, past and present. In addition, we present a new analysis of the differential distribution of material artifacts among village sites.

Morris, Martina. 1993. Epidemiology and Social Networks: Modeling Structured Diffusion. *Sociological Methods and Research* 22:99-126.

The spread of a disease through human populations can be significantly altered by patterned networks of social contact. Largely in response to AIDS, the way in which social networks channel disease has recently become the focus of a sustained modeling effort in epidemiology. The challenge has been to develop a general framework capable of representing both simple and arbitrarily complicated mixing structures, and of solving the matching problem in a non-equilibrium multi-group population. This work is reviewed here. A recent contribution from network analysis links log-linear models of contact structure to diffusion equations for transmission. This framework is described in detail, and some applications to the spread of AIDS are described. The results show that careful analysis of structured mixing can reveal significant features of an epidemic that would otherwise be missed.

Morris, Martina, Annette D. Bernhardt and Mark S. Handcock. 1994. Economic Inequality: New Methods for New Trends. *American Sociological Review* 59:205-219.

Two positions dominate the debate over the recent increases in economic inequality in the United States. The "job-skill mismatch" thesis attributes rising inequality to growth in the number of high-skill, high-wage jobs that leaves less-skilled workers behind. The "polarization" thesis, in contrast, argues that the service shift generates growth in the number of both high-wage and low-wage jobs, and declines in the middle. Standard summary measures of distributional inequality cannot discriminate between these depictions of where job growth is occurring. We propose new methods for measurement that provide both summary and detailed information about the distributional shifts in earnings and a framework for statistical inference. Using data from the Current Population Survey (CPS) on yearly earnings from 1967 to 1987, we show that the trends in distributional inequality vary considerably by race, gender, and time. While the evidence provides more support for the polarization argument, this thesis needs refinement if it is to account for the variations in changing inequality observed here.

Nardi, Peter M. and Drury Sherrod. 1994. Friendship in the Lives of Gay Men and Lesbians. *Journal of Social and Personal Relationships* 11:185-199.

Results from a survey of 283 gay men and lesbians contradict some of the findings of earlier research on gender differences in same-gender friendships. Data from a variety of scales and items indicate that, while gay males and lesbians value casual, close and best friendships equally (similar to research findings on heterosexual men and women), their definitions and enactments of friendship also were similar (unlike other research which supports differences along gender lines).

However, some gender differences did persist in the ways gay men and lesbians dealt with conflict and sexuality within friendships. The implications of considering sexual orientation and gender in the study of friendship are discussed in terms of theoretical, methodological and socio-political issues.

Nezlek, John B. and Constance J. Pilkington. 1994. Perceptions of Risk in Intimacy and Social Participation. *Personal Relationships* 1:45-62.

The present study examined the relations between individuals' social lives and the risks they perceived in being intimate with others. Participants maintained a variant of the Rochester Interaction Record (Wheeler & Nezlek, 1977) and completed the Risk in Intimacy Inventory (Pilkington & Richardson, 1988). The results indicated that, compared to people who perceived less risk, people who perceived more risk in intimacy had less rewarding social lives on measures of socio-emotional and socio-instrumental dimensions of interaction. Risk in intimacy concerns were particularly salient for women in their interactions with the opposite sex and for men in their interactions with the same sex. In addition, the statistical associations between perceptions of risk in intimacy and characteristics of interactions within close opposite-sex personal relationships varied as a function of participants' sex and the nature of this personal relationship.

O'Reagan, Katherine M. and John M. Quigley. 1993. Family Networks and Youth Access to Jobs. *Journal of Urban Economics* 34:230-248.

Some networks may be more useful than others in affecting labor market outcomes. In particular, social contacts who are employed may be more useful in job referral than those who are not employed. Also, social networks containing non minority workers or male

workers may have better and more extensive labor market contacts. This paper considers indirect evidence of the importance of job access via networks for the employment of urban youth. We measure the extent to which probabilities of employment and industry affiliation for urban youth are related to proxies for their access to informal networks. Proxies for labor market contacts include the labor market circumstances of other household members--mothers, fathers, and siblings--key members of a youth's social network. The empirical analysis is based upon 1980 PUMS data with more than 55,000 observations on at-home youth in the 47 largest U.S. metropolitan areas. The large sample permits us to test for differences across race and sex of youth and parent in determining youth labor market outcomes. Our results support the importance of family networks in facilitating youth access to jobs. We also find some evidence that male parents are more important in affecting youth employment. These effects vary by race and are more important for whites.

Pataki, Sherri Painter, Cheryl Shapiro and Margaret S. Clark. 1994. Children's Acquisition of Appropriate Norms for Friendship and Acquaintances. *Journal of Social and Personal Relationships* 11:427-442.

Research with adults demonstrates the existence of distinct norms governing the intentional giving and receiving of benefits within the context of different types of relationships. This study focuses on the development of children's adherence to these norms. We examined first and third grade children's allocation of jointly earned rewards after they had worked on a task with either an acquaintance or a friend. In both grades, more children working with friends than with an acquaintance divided the reward equally. In both grades acquaintances tended to use an equity norm more often than did friends. This

effect was not significant among first graders but was significant among third graders. Moreover, third grade pairs of friends were significantly more likely than first grade pairs of friends to divide rewards equally. These results provide evidence of children's increasing use of communal norms in their friendships.

Rickson, Roy E. and Jean-Yves Parlange. 1994. Structural Differentiation and Size in Organizations: A Thermodynamic Formulation and Generalization. *Journal of Mathematical Sociology* 19:69-90.

Relationships between size and structural differentiation are basic points of analysis by organizational sociologists. Building upon Blau's 1970 theory of size and structure in organizations, we present a thermodynamic model of these relationships that offers a new theoretical perspective on processes central to understanding organizations: structural stability, equilibrium and change. Our method is to adapt Blau's theory to thermodynamic principles that specify relationships between organizational parameters such as size and differentiation and thereby explain stability. The underlying question for analysis, we propose, is the nature of organizational stability rather than temporal direct or indirect relationships between organizational size and structural differentiation. Starting with Blau's formal theory of size and differentiation, we use the model to logically justify and clarify interpretations in his generalizations and the more recent work of others. We start with Blau's theory because of its focus on stability and equilibrium in organizations and derive stability conditions in organizational structures by using a thermodynamic theory of physical systems.

Rozál, Paul M., J. A. Hartigan. 1994. The MAP Test for Multimodality. *Journal of Classification* 11:5-36.

We introduce a test for detecting multimodality in distributions based on minimal constrained spanning trees. We define a Minimal Ascending Path Spanning Tree (MAPST) on a set of points as a spanning tree that has the minimal possible sum of lengths of links with the constraint that starting from any link, the lengths of the links are non-increasing towards a root node. We define similarly MAPSTs with more than one root. We present some algorithms for finding such trees. Based on these trees, we devise a test for multimodality, called the MAP Test (for Minimal Ascending Path). Using simulations, we estimate percentage points of the MAP statistic and assess the power of the test. Finally, we illustrate the use of MAPSTs for determining the number of modes in a distribution of positions of galaxies on photographic plates from a rich galaxy cluster.

Ruggles, Steven. 1994. The Origins of African American Family Structure. *American Sociological Review* 59: 136-151.

I use a new data source, the Integrated Public Use Microdata Series, to trace race differences in family structure between 1880 and 1980. Analysis confirms recent findings that the high incidence among African-Americans of single parenthood and children residing without their parents is not a recent phenomenon. From 1880 through 1960, black children were two to three times more likely to reside without one or both parents than were white children. In recent years, however, the race differential in parental absence has grown. Also, blacks have had a consistently higher percentage of extended households than have whites, but until 1940 this was the result of single parenthood and parentlessness among children: Extended households were more common among whites once the effects of absent parents were controlled.

Saenz, Rogelio and Robert N. Anderson. 1994. The Ecology of Chicano Interstate

Net Migration 1975-1980. *Social Science Quarterly* 75:37-52.

This analysis uses data from the 1980 Public Use Microdata Sample to examine the 1975-80 internal net migration patterns of Chicanos across the U.S. states from a human ecological perspective. The findings demonstrate the usefulness of the sustenance organization model in the study of Chicano internal net migration. Sustenance differentiation and Chicano industrial segregation are significantly related to Chicano net in-migration within the United States. Data for Anglos are presented for comparative purposes.

Sarason, Irwin G., Barbara R. Sarason and Gregory R. Pierce. 1994. Social Support: Global and Relationship-Based Levels of Analysis. *Journal of Social and Personal Relationships* 11:295-312.

This article reviews the development of a program of research on social support. It began with the construction of an instrument to assess overall support and determination of its correlation with various indicators of adjustment and performance. This led to inquiries into how people at different support levels behave socially and how they perceive the behavior of others. The results of these studies led, in turn, to focusing attention on the relative contributions to outcomes of both global and relationship-specific perceived support. We provide examples of studies that characterize each phase of the research and discuss needs for future research, with special emphasis on the need for closer integrations of research on social support and personal relationships.

Schneider, Barry H., Judith Wiener and Kevin Murphy. 1994. Children's Friendships: The Giant Step Beyond Peer Acceptance. *Journal of Social and Personal Relationships* 11:323-340.

Differences and similarities between the constructs of friendship and global peer acceptance in childhood are considered. Research to date has identified the features of children's friendships. Children appear to be capable of forming stable, close friendships at younger ages than was once thought. Gender differences in children's friendships have received considerable attention, but other types of individual difference have not been studied extensively. The synthesis of findings obtained using diverse methodologies in testing constructs derived from different theories has contributed to appreciation of the distinct and complex nature of children's friendships.

Seccombe, Karen and Masako Ishii-Kuntz. 1994. Gender and Social Relationships Among the Never-Married. *Sex Roles* 30:585-604.

This research explores the social networks among growing numbers of men and women who have never married. We use a representative sample of 193 never-married men and 217 never-married women, of whom 73% of the men and 60% of the women were white and 16% of the men and 20% of the women were black. We hypothesize that single women have a more extensive social network than do men. Second, we investigate the impact of gender roles and norms of filial responsibility and selected sociodemographic variables upon social interaction by gender. Our findings indicate that gender differences are not as anticipated: (1) while never-married women interact more frequently with relatives than do never-married men, no differences were noted among friendships or neighborhood networks; (2) time spent in social interaction was more likely to differ by marital status than it was by gender; (3) compared to married persons, the never-married are overrepresented in the extreme categories of interaction, both isolated and

very active; (4) gender role ideology and filial responsibility did not significantly predict social interaction for either men or women, with the exception that, among never-married men, those with lower expectations of filial responsibility spent more time with friends.

Segal, Uzi. 1994. Stochastic Transitivity and Quadratic Representation Functions. *Journal of Mathematical Psychology* 38:102-114.

A preference relation is stochastically intransitive if there are three options a , b , and c such that on average the decision maker more often chooses a out of $\{a, b\}$, b out of $\{b, c\}$, and c out of $\{a, c\}$. It is claimed by Machina (1985, *Economic Journal* 95, 575-594) that if a preference relation over lotteries is strictly quasi-concave, then since it is optimal for decision makers to randomize, a transitive preference relation may lead to observed stochastic intransitivity. This paper proves that this is the general case. Unless it can be represented by a quadratic utility function, a strictly quasi-concave preference relation must lead to observed stochastic intransitivity.

Sharabany, Ruth. 1994. Intimate Friendship Scale: Conceptual Underpinnings, Psychometric Properties and Construct Validity. *Journal of Social and Personal Relationships* 11:449-469.

The Intimate Friendship Scale is reviewed based on 16 studies relevant to children and preadolescents. The conceptual background is presented. Intimate friendship is considered a configuration of diverse but coherently related quantitatively commensurate elements, specified here. The structure of the original scale is described, as well as its eight dimensions of content. Data on the scale's reliability, content validity (through the use of judges), criterion validity (using reciprocity of choice), predictive validity (through follow-up

comparisons after 7 years), construct validity (through comparisons involving kibbutz and city, social class, divorce, twins, defense mechanisms and group interventions) and discriminant validity (through comparisons with comradeship, popularity, role-taking, IQ and social desirability) are presented. The discussion addresses questions regarding the scale, and suggests directions for future research.

Shechtman, Zipora, Naomi Vurembrand and Rachel Hertz-Lazarowitz. 1994. A Dyadic and Gender-Specific Analysis of Close Friendships of Preadolescents Receiving Group Psychotherapy. *Journal of Social and Personal Relationships* 11:443-448.

This study investigated the effect of therapy/counseling groups on friendships of latency-age children lacking in social efficacy, referred for counseling by their homeroom teachers. Experimental students underwent weekly therapy in six small groups, whereas control students received routine academic counseling services over the same period (an entire school year). Self- and other-reported data confirmed significant gains in intimacy in best and second-best friends among experimental students, particularly the boys.

Shulman, Shmuel, James Elicker and L. Alan Sroufe. 1994. Stages of Friendship Growth in Preadolescence as Related to Attachment History. *Journal of Social and Personal Relationships* 11:341-361.

A process model of friendship formation in preadolescence is proposed in this article, and the continuity of early parent-child relationships (quality of attachment) with later friendship processes and peer competence is explored. Thirty-two preadolescents, subjects in a longitudinal study of attachment and subsequent social development, were observed in 4-week summer day camps. Those who had

been securely attached with their caregivers as infants revealed a higher level of peer competence than did those with anxious attachment histories. However, preadolescents of both types of attachment reported and were observed to form friendships. In-depth case studies of four friendship pairs of preadolescents with different attachment histories suggested that there are corresponding differences in the quality and growth processes of those pairs of friendships. A three-stage model of preadolescent friendship growth is proposed, based on relationship dimensions and reflective of earlier relational patterns.

Silver, Steven D., Bernard P. Cohen, and James H. Crutchfield. 1994. Status Differentiation and Information Exchange in Face-to-Face and Computer-Mediated Idea Generation. *Social Psychology Quarterly* 57:108-123.

Two experiments studied the effects of status differentiation on idea generation in four-person groups. One experiment investigated face-to-face interaction; the second examined interaction in a computer-mediated environment. A conceptual framework based on the "social risk" of initiating various types of messages provided hypotheses for these studies. In both media, status-undifferentiated (SU) groups generated significantly more ideas than status-differentiated (SD) groups. In addition to ideas, the study examined other message types. The principal finding was that the proportion of "data/fact" messages in total messages exchanged was significantly larger in the SD groups in both experiments. Coding of videotapes from the face-to-face groups documented a censoring of ideas in SD groups; in contrast to SU groups, these groups failed to enter ideas in the written records that they had discussed orally. SU groups also were more likely to exchange positive evaluations and to sustain periods of ideation in silence. We discuss the implications of the findings for our conceptual framework and for

managing "process losses" in idea generation.

Snijders, Tom A. B. and Roel J. Bosker. 1994. Modeled Variance in Two-Level Models. *Sociological Methods and Research* 22:342-363.

The concept of explained proportion of variance or modeled proportion of variance is reviewed in the situation of the random effects hierarchical two-level model. It is argued that the proportional reduction in (estimated) variance components is not an attractive parameter to represent the joint importance of the explanatory (independent variables for modeling the dependent variable). It is preferable instead to work with the proportional reduction in mean squared prediction error for predicting individual values (for the modeled variance at level 1) and the proportional reduction in mean squared prediction error for predicting group averages (for the modeled variance at level 2). It is shown that when predictors are added, the proportion of modeled variance defined in this way cannot go down in the population if the model is correctly specified, but can go down in a sample; the latter situation then points to the possibility of misspecification. This provides a diagnostic means for identifying misspecification.

Snijders, Tom, Marcel Van Dam and Jeroen Weesie. 1994. Who Contributes to Public Goods? With an Application to Local Economic Policies in the Netherlands. *Journal of Mathematical Sociology* 19:149-164.

We present three models for the extent to which actors reduce their contributions to the production of a public good because of expected contributions by other actors. The first model is a simple game theoretic model, the second a spatial autocorrelation model, and the third is a hybrid of the first two models. Estimation of the three models from incomplete data is discussed. The three

models are applied to data on economic policies of municipalities in the Netherlands. In particular, it is probed whether municipalities take a free ride on the measures of their neighbors.

Stevenson, William B. and Mary C. Gilly. 1993. Problem-Solving Networks in Organizations: Intentional Design and Emergent Structure. *Social Science Research* 22: 92-113.

Although formal designs and networks of ties are both hypothesized to affect organizational processes, there have been few relational studies of their effects on the flow of information within organizations. Using an innovative method for tracing information through organizations, the authors followed problems as they were passed among personnel in a hospital. Propositions are developed about the role of formal position and networks of ties on the processing of information.

Strang, David and Nancy Brandon Tuma. 1993. Spatial and Temporal Heterogeneity in Diffusion. *American Journal of Sociology* 99:614-639.

Standard models of diffusion assume spatial and temporal homogeneity. This article develops a class of diffusion models that incorporate spatial and temporal heterogeneity by turning to the individual level within an event-history framework. These models permit the analyst to represent social structural relations thought to channel diffusion, and to model decay in the influence of events over time. Heterogeneous diffusion models are applied to a reanalysis of data reported in Coleman, Katz, and Menzel's classic diffusion study. Network centrality and local structures of influence based on cohesive relations and structural equivalence are all shown to channel the diffusion of tetracycline.

Talmud, Ilan. 1994. Relations and Profits: The Social Organization of Israeli Industrial Competition. *Social Science Research* 23:109-135.

This paper examines a structural theory of industrial organization and operation. The analytical approach taken is largely based on the premise that industry is embedded in the social structure of market competition. Moreover, imperfect competition and industrial resource dependence are composed of and reflected in interindustrial transaction patterns. Using network models of imperfect competition, this study explains the determinants of Israeli industrial performance. The first part of this paper inquires into the structure of interindustrial relations using structural equivalence as a diagnostic tool. In the second part structural determinants of industrial profitability are estimated. Profitability is predicted by the degree of control an industry has over its domestic transactions and its linkage to the world economy. Implications of this study for the theoretical models of social competition and for an empirical analysis of markets and firms are discussed.

Treadwell, Thomas W., Leach, Evan, and Stephen Stein. 1993. The Social Networks Inventory: A Diagnostic Instrument Measuring Interpersonal Relations. *Small Group Research* 24:155-178.

The literature on the social atom construct has a sound theoretical foundation emerging from Moreno's theory of spontaneity but is psychometrically limited. Most versions of the social atom test are ambiguous nonstandardized and difficult to interpret. Although the range of definition is varied the basic difficulty with many versions of the social atom test is absence of measurement organization, normative data, and congruent test design. A revised retitled version of the social atom test, the Social Networks

Inventory (SNI), consistent with Moreno's theory of interpersonal networks is addressed. Information gained from the SNI is useful in establishing task and emotional roles of group members and in determining group objectives. Directions regarding the test's administration and scoring procedures along with evidence of reliability and validity are presented. Its use as a research and clinical tool is discussed.

Uehara, Edwina S. 1994. The Influence of the Social Network's 'Second-Order Zone' on Social Support Mobilization: A Case Example. *Journal of Social and Personal Relationships* 11:277-294.

Although social support researchers have long acknowledged the utility of social network analysis, few have shown the scope of analysis that is most useful to understanding how our social ties 'buffer' us from adversity and 'channel' us to other resources in times of trouble or transition. For the most part, researchers have limited their analyses to what Barnes (1969) and Mitchell (1969) call the 'primary zone' (the links among and between the support receiver and those persons directly linked to him or her). In this article, it is suggested that expanding analysis to the network's 'second-order zone' (the primary zone plus the ties between persons tied directly to support providers, but not to the receiver) enhances understanding of social support outcomes. To explore this thesis, the article examines social support and social network data from a field study of social support mobilization among low-income African-American women household heads in Chicago. I first attempt to explain observed social support outcomes by reference to primary zone variables (density and percentage of ties of 'high' versus 'low' intensity). These are found to be only partially successful. Next, second-order zone variables are added to the analysis. This improves our ability to explain outcomes. It is suggested future social support analysis should

encompass the second-order zone.

Umberson, Debra and Meichu D. Chef. 1994. Effects of a Parent's Death on Adult Children: Relationship Salience and Reaction to Loss. *American Sociological Review* 59:152-168.

In this study we assess the impact of a parent's death on adult children's physical and psychological functioning. Individuals from 24 to 96 years old were interviewed in 1986 (N = 3,617) and again in 1989 (N = 2,867). In the intervening three years, 207 respondents experienced the death of a biological parent. Our results indicate that when compared to adult children who are not bereaved, bereaved adult children experience a significant increase in psychological distress and alcohol consumption and a decline in physical health status. We also developed a theoretical framework to guide an analysis of group differences in adult children's reactions to a parent's death. Our analysis shows that some groups experience a substantially greater decline in functioning than others following a parent's death, whereas other groups actually experience improved functioning following a parent's death. Depending on the type of outcome assessed, several factors are associated with children's reactions to a parent's death: age and marital status of the child, gender of the child and the deceased parent, the quality of previous adult interactions with the deceased parent, and childhood memories of the deceased parent.

Vach, W. 1994. Preserving Consensus Hierarchies. *Journal of Classification* 11:59-77.

In numerical taxonomy we often have the task of finding a consensus hierarchy for a given set of hierarchies. This consensus hierarchy should reflect the substructures which are common to all hierarchies of the set. Because there are several kinds of substructures in a

hierarchy, the general axiom to preserve common substructures leads to different axioms for each kind of substructure. In this paper we consider the three substructures *cluster*, *separation*, and *nesting*, and we give several characterizations of hierarchies preserving these substructures. These characterizations facilitate interpretation of axioms for preserving substructures and the examination of properties of consensus methods. Finally some extensions concerning the preserving of qualified substructures are discussed.

Van Tilburg, Theo. 1992. Question Sequence Effects in the Measurement of Reciprocity. *Quality and Quantity* 26:395-408.

This article focuses on the methodological problem of sequence effects in the measurement of reciprocity of social support (the balance between giving and receiving of support). It is hypothesized that the likelihood that a relationship is reciprocal will be greater if the pairs of questions on receiving and giving support immediately succeed each other in the interview than if an entire set of questions on receiving support precedes the entire set of reversed questions. The results of the survey conducted with an experimental design among 179 elderly respondents did not refute this hypothesis; a method effect was observed of an average of about 10% in the expected direction. The method effect was also evident in the results regarding the exchange orientation: under the pairwise condition, no significant associations were observed between exchange orientation and reciprocity, whereas significant associations in the expected direction were observed under the blockwise condition.

Van Meter, Karl M. 1994. Sociological Methodology. *Bulletin de Methodologie Sociologique* 42: 72-94.

Sociology progresses through the joint

advancement of both theory and methodology. The diversity of its theoretical approaches is mirrored by the diversity of its methodologies. There has been a disappearance or loss of pertinence of the distinction between "quantitative" and "qualitative" methodologies. Perhaps a more constructive distinction is that between "ascending" and "descending" methodologies, noting however that these are complementary and may be combined in a single research project. All methodologies have a "non universal" character even though each has its particular domain of competence and pertinence. Multi-method analysis is valuable in obtaining stable results and opening up communications between subdisciplines. A general sociological research procedure is presented in four "classic" points and to which two often unexplicit basic steps are added: the initial transformation and the final transformation of information during research procedure.

Walker, Michael E., Stanley Wasserman, and Barry Wellman. 1993. Statistical Models for Social Support Networks. *Sociological Methods and Research* 22:71-98.

In recent years, the conceptualization of social support in the literature has become increasingly sophisticated, facilitating the consideration of more complex theories. Researchers no longer consider the mere availability of social ties, but look instead at the flow of specific resources through a social network. This article discusses how the social network has been defined in the context of social support. Research is reviewed, indicating how characteristics of individual tie (e.g., tie strength, proximity, frequency of contact, similarity) are related to the provision of support. Also examined are how characteristics of the personal network (e.g., size, density) relate to support and wellbeing. Statistical models for network analysis and how they should prove useful in studying social support are then discussed.

Wallace, Roderick. 1993. A Fractal Model of HIV Transmission on Complex Socio-geographic Networks : Towards Analysis of Large Data Sets. *Environment and Planning A* 25:137-148.

A paradigm of HIV (human immunodeficiency virus) transmission along very large 'sociogeographic networks' spatially focused nets of social interaction is extended to include fractal (dilationally self-similar) structures upon which a metric of 'sociogeographic' distance can be defined. It is conjectured that, by proper definition of such a metric, the complex filamentary structure of a spreading infection may be mapped onto a simple, radially expanding, relatively compact set, providing a more direct characterization of disease transmission. Inverse transformation then provides maps of disease dynamics in 'real' geographic and social spaces. Techniques are sketched for determining the sociogeographic structure of a large, geographically centered social network providing a possible empirical basis for predicting forms and rates of spread of the initial, rapid, stages of an HIV outbreak for networks not yet infected, and perhaps greatly expanding the utility of routinely collected small-area administrative data sets in the design of mutually reinforcing, multifactorial disease control strategies.

Wallace, Roderick. 1993. A Fractal Model of HIV Transmission On Complex Socio-geographic Networks, Part 2: Spread From A Ghettoized 'Core Group' Into A 'General Population'. *Environment and Planning A*. 26:000-000.

Study of the initial stages of HIV transmission along a 'sociogeographic network' - a large, complex, spatially focused social network with possibly fractal geometry - is extended to include interaction between a low dimensional ghettoized 'core group' within which the disease spreads very rapidly and a higher

dimensional, more loosely structured 'general population' in which spread is relatively slow. A mathematical modeling exercise suggests that contextually modulated interaction between them can be highly nonlinear and may greatly increase the initial rate of disease transmission within the 'general population.' This work contributes to a growing body of literature which suggests that programs to control HIV infection within the majority heterosexual population of the United States will fail spectacularly without particular focus on the coupled physical and social stabilization and rehabilitation of the urban ghettos of marginalized populations which are the present, and rapidly expanding, disease epicenters. Evidence suggests their continued disintegration can both increase disease rates within the epicenters and increase the coupling between core groups and general populations by creating large numbers of spatially or economically displaced refugees.

Wellman, Barry. 1992. Which Types of Ties and Networks Provide What Kinds of Social Support? *Advances in Group Processes* 9: 207-235.

This article describes the composition and structure of personal community networks. It concentrates on the score or so ties that are actively used, and especially on the half-dozen or so close, intimate ties. It integrates research findings from hundreds of scholars to discuss which types of ties and networks provide different kinds of social support.

Wellman, Barry. 1993. *Communication Et Nouvelles Technologies*. Lyon: Editions PPSH. pages 373-389.

En 1976, il a fondé le Réseau International pour l'analyse des réseaux sociaux, la principale organisation savante dans ce domaine, et a dirigé cet organisme interdisciplinaire jusqu'en 1988. Ses thèmes de recherche actuels sont les communautés

personnelles et le travail coopératif (collectives).

Wetherall, Charles, Andrejs Plakans, and Barry Wellman. 1994. Kinship and Community In an Eastern European Peasant Estate. Forthcoming in *Journal of Interdisciplinary History*.

How people in the past used and valued kinship in their daily lives remains one of the most important, yet most elusive, matters in contemporary social history. The issues here are large. Certainly the largest is the character of community life and how that character changed in the temporally imprecise, yet unmistakable, transition from the traditional to the modern world. Intimately related to this central question are others surrounding the nature of family life and the relationship of family to the various ecologies, economic systems, demographic regimes, and cultures that dotted the historical landscape of Europe and the West. In what follows we propose that a social network approach not only serves to conceptualize kinship and community in new and productive ways, but also helps to reconcile two longstanding concerns in family history that have led historians to study kinship in competing ways, and which reflect the current division between family history and family demography. In support, we offer a case study of kinship in an Eastern European peasant estate in the mid-nineteenth century. Although we do not advance either a full fledged model or a complete application of the social network approach, we believe the network perspective we present and apply adds to our understanding of European kinship and thus provides a guide for future work.

Whaley, Kimberlee L., Tamara S. Rubenstein. 1994. How Toddlers "do" friendship: A Descriptive Analysis of Naturally Occurring Friendships in a Group Child Care Setting. *Journal of Social and Personal Relationships* 11:383-400.

Researches examining friendship between peers often begin to study children during the preschool years. While research has indicated that toddlers interact with peers, very little is known about how they negotiate friendships. This study uses qualitative methodology to examine how a group of toddler friends interact with each other - how they "do" friendship. Children were videotaped as they went about their daily interactions in a mixed-age, infant-toddler child care setting. Data was collected over a ten month period, resulting in 200 hours of videotape. Interactions between four toddler friendships dyads (ages 22-36 months) were coded using dimensions of friendships as used by Rizzo (1989). Results indicate that five of eight coded dimensions are present in these toddler friendships. Further, results suggest that toddlers engage in much more complex relationships than has been previously indicated. A developmental theory of friendship is presented.

Yingling, Julie. 1994. Constituting Friendship in Talk and Metatalk. *Journal*

***of Social and Personal Relationships* 11:411-426.**

This work sets forth a relational perspective on developing friendships. It examines the interface between children's talk in conversations with their friends and what they say about that talk in interviews following the conversation. Five configurations emerged in the interface between friends' conversational control and their expectations for control. Two patterns were fairly static and described older, long-term or less-than best friends. In these configurations, partners either agreed that one partner controlled the conversation when actually they shared control, or else both of them failed to perceive that one partner controlled the talk. The other three configurations revealed change and/or disagreement between best friends. In these cases, partners consistently disagreed in their perceptions of control, but one partner accurately perceived the controller. These latter patterns may describe the kinds of relational talk that constitute developing models of friendship.

Abstracts: BOOKS

Braun, Norman. 1993. *Socially Embedded Exchange*. New York: Peter Lang.

This monograph presents theoretical and empirical analyses of competitive exchange systems with potentially incomplete network relations between rational actors. Its basic idea is that these relations affect individual trading opportunities. The analyses show that asymmetrical access patterns between market participants have important effects for the outcomes of transactions and structural features of exchange systems.

Brooks, Stephen and Alain-G. Gagnon. 1994. *The Political Influence of Ideas: Policy Communities and the Social Sciences*. Westport, CT: Greenwood.

This collection explores the various dimensions of social scientists' participation in policy-making, with special emphasis on their roles within policy communities and their relationship to the state. Several of the chapters examine the role of research institutes and think tanks within policy communities in the United States, Canada, and Eastern Europe.

Contents: Introduction; Policy Communities and the Social Sciences (Stephen Brooks); Theoretical Issues; Rethinking Corporatism and Comparative Social Science: An Old-New Approach (Fredrick Appel and Alain-G. Gagnon); Policy Networks a State Autonomy (Martin J. Smith); New Social Movements and Routes to Representation: Science versus Politics (Susan D. Phillips); Ideas, Institutions, and Innovation: Economic Policy in Canada and Sweden (Neil Bradford); The Role of Institutes; Policy Research Institutes and Liberalized International Services Exchange (Stephen D. McDowell); Balancing Relevance and Integrity: Social Scientists and Canada's Asia-Pacific. Policy Community (Everet A.

Lindquist); Foundations, Social Scientists, and Eastern Europe (Joan Roelofs and Erkki Berndtson); From Radio Research to Communications Intelligence: Rockefeller Philanthropy, Communications Specialists and the American Policy Community (William Buxton).

Coleman, James S. and Thomas J. Fararo. 1992. *Rational Choice Theory: Advocacy and Critique*. Newbury Park, CA: Sage.

Rational choice theory marks a controversial, yet major, change in American social theory. As one of the few general theories of how individual, groups, organizations, and social structures behave, its impact on sociological theorizing has been enormous. In *Rational Choice Theory*, Coleman and leading figures in the debate, both advocates and critics, present their views on the values and limitations of rational choice theory. Some of its advocates link it to similar broad theoretical models developed by other sociologists, such as exchange theory and solidarity theory. Opponents, on the other hand, attack its weakness in explaining individual emotional or organizational behavior. Other scholars debate its explanatory power.

Whether supporters or skeptics, sociologists and other social scientists, including social theorists, political scientists, philosophers, and economists, will find themselves immersed and challenged in a creative discussion of the merits and difficulties of the model, and its applicability to both macro- and micro-level social issues.

Contents: Introduction (James S. Coleman and Thomas J. Fararo); Part I: Themes of Advocacy. 1. Advocacy Within a Methodology of Theory Development: "The Method of Decreasing Abstraction" (Siegwart

Lindenberg); 2. Advocacy Within a Broader Scheme of Purposive Action: "The Role of Models of Purposive Action in Sociology" (Margaret Mooney Marini); 3. Advocacy for a Theory of Exchange and Coercion: "The Principle of Rational Choice and the Problem of a Satisfactory Theory" (David Willer); 4. Advocacy for a Theory of Social Order: "The Attainment of Global Order in Heterogeneous Societies" (Michael Hechter, Debra Friedman, and Satoshi Kanazawa); Part II: Critical Perspective. 5. A Microsociological Critique: "Rationality and Emotion: Homage to Norbert Elias" (Thomas J. Scheff); 6. A Macrosociological Critique: Rationality and Robustness in Multilevel Systems" (Michael T. Hannan); 7. A Neofunctionalist Critique: "Rational Choice Theory: A Critical Assessment of its Explanatory Power" (Richard Munch); 8. A Normative Critique: "Weakness in Rational Choice Theory's Contribution to Comparative Research" (David Sciulli); Part III: Metatheory: Rational Choice Pro and Con. 9. Advocacy: "Is Rational Choice Theory a Rational Choice of Theory?" (Peter Abell); 10. Critique: "The Limits of Rational Choice Explanation" (James Bohman).

Conville, Richard L. Editor. 1993. *Uses of "Structure" in Communication Studies*. Westport, CT: Greenwood Publishing Group

Conville has assembled a collection of essays that share a consideration of "structure" as it manifests itself in human communication. Personal stories, accounts of events, narratives, diaries and unstructured interviews are ever more widely appreciated today as valid data for understanding human cognition and human interaction. Some chapters present solutions to the problem of how to analyze such materials and how to conceptualize them as data. Other chapters argue for the inevitability of structure in communication

study. Still other chapters demonstrate structure in human communication. What ties all of the chapters together is the idea that structure is ubiquitous in communication literature, even in the face of postmodern and poststructuralist critiques alleging the disappearance of structure, the fragmentation of culture, and the impossibility of communicating across boundaries. As the authors demonstrate, the concept of structure enters the scholarly conversation by way of such diverse and sometimes unexpected vehicles as dialectical theory, relationship development, deconstruction, relational communication, and narrative theory.

Contents: Diligently Seeking Structure (Lee Thayer); From Linguistics to Poetics: Saussure at Play (Nada K. Doany and Robert Hopper); Thinking Dialogically about Communication in Personal Relationships (Leslie A. Baxter); The Structure of Interpersonal Structuring Processes: A Relational View (Frank E. Millar); A Postmodern Analysis of Presidential Debate Sponsorship (Marjorie Fish); Dialogues Between Ex-spouses: Evidence of Dialectical Relationship Development (Carol Masheter); Relationship Rejuvenation: Arresting Decline in Personal Relationships (William W. Wilmot and Debra Cragg Stevens); Structural Implications of the Symbol Model for Communication Theory: Language as Constitutive Articulate Contact (John Stewart); Conversational Episode Structure (Bryan K. Crow); What Is a Structure Then? (Richard L. Conville).

Crow, Graham and Graham Allan. 1994. *Community Life: An Introduction to Local Social Relationships*. London: Harvester Wheatsheaf.

An up-to-date and comprehensive book on the sociology of community in contemporary Britain which surveys the growing literature on the nature of local social relationships in

modern society in an accessible way. It draws on a wide range of recent empirical and theoretical work to illustrate topics ranging from economic change and geographical mobility to the relationship between social policy makers and community organizations and recognizes the centrality of gender divisions and spatial segregation along ethnic lines to community life.

Contents: Old and New Themes in the Sociology of Community. The Way Things Were: Community Life in Past Generations. The Restructuring of Communities. The Impact of Economic Change. Moving In and Moving On: The Significance of Geographical Mobility. Ethnicity, Solidarity and Exclusion: Race and Spatial Social Segregation, Home Ownership and Home Life: Changing Ideals of Housing and Domesticity. The Local State and Urban Redevelopment. Community as a Social Force. Community as Civil Society: The Uncertain Place of the State in Community Life. Conclusions: The Continuing Importance of the Sociology of Community.

Denoëux, Guilain. 1993. *Urban Unrest in the Middle East: A Comparative Study of Informal Networks in Egypt, Iran, and Lebanon*. Albany: State University of New York Press.

This volume provides an examination of the politics of Middle Eastern cities within a broad historical and comparative context. Focusing on the contribution of informal networks, the author examines four types: patron-client, occupational, religious, and residential. Contrary to recent claims, the author contends, informal associations do not necessarily play a stabilizing role in urban politics; indeed, they serve as effective instruments for mobilizing popular dissent. The book goes on to identify the conditions under which these informal urban networks can change from a system supportive role to a system-challenging one. The analysis

emphasizes the impact of Islam on contemporary forms of urban violence in the Middle East, and emphasizes the destabilizing potential of the urban impoverished. The role of Islamic fundamentalism in urban unrest is examined as well.

Deroy, Françoise, Christian Léomant and Gaston Pineau. Editors. 1994. *Les Réseaux Sociaux: Confrontation D'Approches (Social Networks: A Comparison of Approaches)*. Centre De Recherche Scientifique.

This special issue of *Études et séminaires* is a double "confrontation d'approches". First because the seminar's members come from different disciplines, especially deviance sociology (Christian Léomant/CNRS-CRIV Paris) and long-life education (Gaston Pineau/Professor of Education studies, University of Tours); second because the invited researchers have various views on networks. From Alain Degenne's (CNRS-LASMAS Paris) formal point of view on social networks is absolutely structural and mathematical; the metaphor is banished. On the other extremity of the palette, Dominique Bachelart, a professor of social work, tells about what she uses: networking with people in social support situation and urging political injunctions for more networking. In the middle of the way, the anthropologist Luc Racine (Professor of Sociology, University de Montréal) explores paths not so precise as graph theory's, but sufficient to have a fair idea of one social network reality. François Deroy (researcher at the department of Sociology, University of Montréal) looks on social resources mobilization throughout Marie Guyart's network in 1639. Deroy works with anthropologist Luc Racine and sociologist Paul Bernard to present Marie as an individual manager networking successfully. At the end of the volume, a bibliography gives networkers some American references, but also a good number of French

and Canadian references. The originality of this work lies in two points: on one hand, this is together anthropological, sociological, formal and pragmatological views upon social networks, on the other hand, this issue tries to make a dialogue between academics and practitioners and networkers.

Contents: Questions on the problems of social networks (Christian Leomant and Gaston Pineau); An anthropological approach to social networks (Luc Racine); Formal approaches to social networks (Alain Degenne); Identification and mobilization of an ego network (Francoise Deroy); A practical use of the notion of network and a proposition of a typology in the field of insertion of the young (Dominique Bachelart); Bibliography (Francoise Deroy).

Matières: Questions sur les problématiques des réseaux sociaux (Christian Léomant et Gaston Pineau); Approche anthropologique des réseaux sociaux (Luc Racine); Approche formelle des réseaux sociaux (Alain Degenne); Identification et mobilization d'un réseau social personnel (François Deroy); Utilisation pratique de la notion de réseau et proposition d'une typologie dans le champ de l'insertion des jeunes (Dominique Bachelart); Bibliographie (François Deroy).

Duck, Steve. 1994. *Meaningful Relationships: Talking, Sense, and Relating*. Newbury Park, CA: Sage.

The book argues that relationships are never "done deals" rather they are continually unfolding and in need of perpetual responsive action and construction. Central to this discussion is the author's contention that relationships are solidly based in the recognition of shared meaning discovered in the way we metaphorically represent the world to ourselves and to others through everyday talk and symbols. Theories presented do not unfold in a sequential manner, rather they are

approached from different angles showing simultaneous relationships in different contexts.

Contents: 1. Talking Sense: Shared Meaning and Talk as a Basis for Relationships; 2. Human Relational Life in Its Context: Living with the Possible; 3. One Mind Encounters the Other; 4. Two Minds Together in Social Context: Guides to Personal Meaning; 5. The Social Action of Relating: Talk and Meaning; 6. Meaning and Research.

Duck, Steve. Editor. 1994. *Dynamics of Relationships*. Thousand Oaks, CA: Sage.

The here-and-now dyadic management of relationship behavior is explored in this volume, which adds considerably to the understanding of relationship processes. Contributors focus on the skills essential for successful relationships, such as: the management of conversation; the ability to listen to others; the development and practical use of relational knowledge; the understanding of the sequences of both verbal and non-verbal behavior; the development of dispositional beliefs about one's partner; and awareness of how future expectations influence the meaning of relational behavior.

Forse, Michel, Jean-Pierre Jaslin, Yannick Lemel, Henri Mendras, Denis Stoclet, and Jean-Hughes Dechaux. 1993. *Recent Social Trends in France, 1960-1990*. Montreal: McGill-Queen's University Press.

After World War II, French society underwent a spectacular transformation due to the baby boom, which was particularly broad-based and prolonged in France and caused the population to climb by a full one-third. At the same time the French economy expanded and the pace of modernization increased, with the result that the wealth of the French quadrupled in a single generation. This book is a record of the resulting transformations of French society.

A prominent feature of the social revolution in France has been the decline of the great national institutions—the Republic, the Army, the Church, and the schools—which are losing their symbolic value and are no longer the targets of ideological disputes. Changes in family life have led to greater instability among couples, but at the same time increased life expectancy has strengthened the kinship system. The customs of the French have also changed. The French education system, originally based on authority and regulations, is now making increasing use of negotiation. As a result, the attitude of the French towards authority has radically changed and the French have learned to negotiate and cooperate among themselves.

Foschi, Martha and Edward J. Lawler. Editors. 1994. *Group Processes: Sociological Analyses*. Chicago: Nelson-Hall.

This book addresses the questions that are raised in the study of how people behave in groups. When do status differences emerge in informal groups? How is group leadership gained and kept? How is power used to achieve influence? Why are some task groups more efficient than others? What rules are group members more likely to follow in allocating rewards to each other? These questions are addressed from the perspective of the "group processes tradition" in sociology. This tradition is characterized by an analytical, theory-driven orientation, rigorous empirical testing of theories, and an emphasis on social structures. The group processes tradition focuses on the social context in which individuals find themselves, rather than on the characteristics of individuals.

Contents: Preface (Martha Foschi and Edward Lawler); 1. The Structure of Theories (Barry Markovsky); 2. The Growth of Theories (David C. Wagner); 3. Experimental Methods (Murray Webster, Jr.); 4. Social

Perception, (Barry Markovsky); 5. Performance Evaluation (Barbara Foley Meeker); 6. Status (James W. Balkwell); 7. Power (John F. Stolte); 8. Justice (Karen A. Hegtvedt); 9. Affect (Cecilia L. Ridgeway); 10. Conflict and Bargaining (Rebecca Ford).

Kellert, Stephen H. 1993. *In the Wake of Chaos: Unpredictable Order in Dynamical Systems*. Chicago: University of Chicago Press.

Chaos theory has captured scientific and popular attention. What began as the discovery of randomness in simple physical systems has become a widespread fascination with "chaotic" models of everything from business cycles to brainwaves to heart attacks. But what exactly does this explosion of new research into chaotic phenomena mean for our understanding of the world? In this timely book, Stephen H. Kellert takes the first sustained look at the broad intellectual and philosophical questions raised by recent advances in chaos theory—its implications for science as a source of knowledge and for the very meaning of that knowledge itself.

Knottnerus, J. David and Christopher Prendergast. Editors. 1994. *Current Perspectives in Social Theory. Vol. 14. Supplement 1: A Brief Description of Recent Developments in the Theory of Social Structure*. Greenwich, CT: JAI Press.

This volume is an integrated collection of essays reviewing and assessing progress in social structural analysis since 1970. Organizationally, the book is divided into six parts corresponding to six analytical levels of social structure: social relationships, social networks, intraorganizational relations, interorganizational relations, societal stratification, and the world system. The ten essays expound and assess what has been learned about the influences of social structure on human behavior at each level of analysis. In

the introduction, the editors examine the metatheoretical issues in structural analysis and promote the cause of theory integration.

Contents: Introduction. Recent Developments in the Theory of Social Structure: Introduction and Overview (Christopher Prendergast and J. David Knottnerus); Social Relationships. The New Studies in Social Organization: Overcoming the Astructural Bias (Christopher Prendergast and J. David Knotterus); Social Exchange Theory and Social Structure: A Critical Comparison of Two Traditions of Inquiry (J. David Knotterus); Expectation States Theory and the Analysis of Group Processes and Structures (J. David Knotterus); Social Networks. Networks in Organizational Structures and Strategies (David Knoke and Miguel Guilarte); Intraorganizational Relations. Structure and Process: Theory and Research on Organizational Stratification (Amy S. Wharton); Interorganizational Relations. Institutional Accounts of Organizations as a Form of Structural Analysis (David Strang); Societal Structures: Stratification Systems and Elites. Social Structure and Life Chances (Peter M. Blau); Assessing the New Structuralism (Amy S. Wharton); The Corporate Elite and the Politics of Corporate Control (Gerald F. Davis); The World System. A Global Social Structure? Evaluating the Advancement of the World-Systems Perspective (William G. Martin).

Kontopoulos, Kyriakos M. 1993. *The Logics of Social Structure*. New York: Cambridge University Press.

The author proposes a fundamental new approach to the study of one of the most central concepts in social analysis, that of social structure. He critiques the leading models and argues that each is inadequate to the task of explaining the complexity of structures that make up society and the process by which these structures are formed and are interlinked. A new conceptualization

of the processes of societal formation is then presented, drawing on recent developments in the physical, biological and cognitive sciences. The author terms this new conceptualization a theory of heterarchy, and it is the first truly comprehensive theory of societal structuration.

Lawler, Edward J. and Barry Markovsky. 1994. *Social Psychology of Groups: A Reader*. Greenwich: JAI Press.

This collection contains articles reflecting trends within what is often termed, 'sociological social psychology'. Social psychological work in sociology and psychology is similar in many respects. A common heritage is reflected in the writings of Heider, Homans, Lewin, Mead, and Thibaut and Kelley, each of whom has had a significant impact on the sociological tradition. The differences between sociological and psychological traditions are primarily matters of emphasis, and three of these are worthy of note. First, the sociological tradition tends to place more stress on social structure and, specifically, on how statuses, roles, or power positions affect the behavior of individuals in groups and of the groups themselves. In sociological social psychology, there is a pervasive social structural theme. Second, the "actors" of primary concern to sociologists are more likely to include both individual persons and the groups, organizations, or societies of which they are members. Bridging the macrosociological and microsociological dimensions of human behavior is another pervasive theme of sociological social psychology. Third, sociological social psychology tends to place more emphasis on cumulative theoretical work, instead of the accumulation of empirical observations. This theoretical style leads to a higher theory-to-data ratio in most sociological approaches relative to their psychological counterparts. All three of these differences are

illustrated by one or more selections in this collection.

Contents: Sociological Social Psychology: A Preface (Edward J. Lawler and Barry Markovsky); Status Cues, Expectations, and Behavior, (Joseph Berger, Murray Webster, Jr., Cecilia Ridgeway, and Susan J. Rosenholtz); Role Differentiation: Orienting Principles (Ralph Turner and Paul Colomy); The Labeling of Mental Illness as a Status Organizing Process (David G. Wagner); Individual Moral Choices and Social Evaluations: A Research Odyssey (Sanford M. Dornbusch); Dissent, Group Process, and Creativity (Charlan Jeanne Nemeth); Power, Dependence, and Coalitions (Karen S. Cook and Mary R. Gillmore); The Structural Goal/Exception Theory of Cooperation in Social Networks of Divorced and Disputing Parents (Janet R. Johnston and Linda E.G. Campbell); Can the Circle be Unbroken? Small Groups and Social Movements (Gary Alan Fine and Randy Stoeker); Generational Conflict and Intergroup Relations as the Foundation for Political Generations (Richard G. Braungart and Margaret M. Braungart).

Lindell, Michael K. and Ronald W. Perry. 1992. *Behavioral Foundations of Community Emergency Planning*. Washington: Taylor and Francis.

Because of the public's increased demands for effective planning and response to community-wide crisis, emergency management has become an increasingly important activity in modern society. Advances in technology have made it possible to detect, monitor, and transmit hazard data more accurately and rapidly than ever before. In addition, development of environmental and engineering systems theory has been matched by advances in the understanding of social systems. Despite this wealth of knowledge, however, the diffusion of scientific information and innovative planning

practices has been sluggish. A source document for basic planning concepts, current emergency response practices and social science data, this book is intended to enable emergency organizations to effectively protect the public's health, safety, and property in community-wide emergencies.

Contents: An overview of emergency management; community emergency planning; functional analysis of organizational response to emergencies; organizational actions in protective action selection and population warning; models of warning response processes; disaster images and their origins—pre-impact factors affecting warning response; warning reception and response; protective action selection and implementation; involving the community in emergency preparedness and response.

Markovsky, Barry, Karen Heimer and Jodi O'Brien. Editors. 1994. *Advances in Group Processes. Vol 11*. Greenwich, CT: JAI Press.

Contents: Preface (Barry Markovsky, Karen Heimer and Jodi O'Brien); Persons, Identities, and Social Interaction (Lee Freese and Peter J. Burke); Discrete Event Simulation and Theoretical Models in Sociology (Thomas Fararo and Norman P. Hammon); Action, Social Resources and the Emergence of Social Structures: A Relational Choice Theory (Nan Lin); Relating Power to Status (Michael J. Lovaglia); A New Theory of Group Solidarity (Barry Markovsky and Edward J. Lawler); Conflict and Aggression: An Individual-Group Continuum (Jacob M. Rabbie and Hein F. M. Kidewujkx); Coherent Structure Theory and Decision-Making in Social Networks: A Case Study in Systems Isomorphy (D. H. Judson and L.N. Gray); Structure, Culture and Interaction: Comparing Two Generative Theories (Cecilia Ridgeway and Lynn Smith-Lovin).

Massey, Doreen. 1994. *Space, Place, and Gender*. Minneapolis, MN: University of Minnesota Press.

In these days of global acceleration on the one hand and intensifying local nationalisms on the other, how should we be thinking about space and place? This new book brings together Doreen Massey's key writings on this debate. In it she argues that we have seen some problematical readings of both terms in recent years, and she proposes an alternative approach more adequate to the issues facing the social sciences today. Massey has organized these debates around the three themes of space, place, and gender. She traces the development of ideas about the social structure of space and place, and the relation of both to issues of gender and certain debates within feminism. Beginning with the economy and social structures of production, Massey develops a wider notion of spatiality as the product of intersecting social relations. On this basis she proposes an approach to "places" that is essentially open and hybrid while always provisional and contested. The themes intersect with much current thinking about identity within feminism and cultural studies. The chapters range from studies of the concepts of place employed in debates on uneven regional development and inner-city problems to arguments about the relationship between the conceptualization of space/place and the social construction of gender relations.

Moffit, Gisela. 1993. *Bonds and Bondage: Daughter-Father Relationships in the Father Memoirs of German-Speaking Women Writers of the 1970s*. New York: Peter Lang.

This book analyzes daughter-father relationships in five father books written by daughters in the late 1970s: Elisabeth Plessen's *Mitteilung an den Adel*, Ruth Rehmann's *Der Mann auf der Kanzel*, Bngitte Schwaiger's *Lange Abwesenheit*, J. Schutting's *Der Vater*,

and Barbara Bronnen's *Die Tochter*. Moffit investigates each daughter's relationship to her father on three separate levels: on the personal level within the context of family dynamics, on the metaphorical level of gendered socialization in a patriarchal society, and on the socio-political level of the father's involvement in National Socialism. Although these daughter memoirs deal with personal family stories, they are considered collective autobiographies that uncover larger cultural patterns in German-speaking countries and thus represent a counterpart to official history.

Moore, Gwen and J. Allen Whitt. Editors. 1992. *Research in Politics and Society. Vol 4: The Political Consequence of Social Networks*. Greenwich, CT: JAI Press.

Contents: Introduction (Gwen Moore and J. Allen Whitt) Unity and Conflict Among Large American Corporations: A Study of Business Testimony Before Congress (Mark Mizruchi); Market Power, Political Power, and State Support: The Case of Israeli Industry (Ilan Talmud) Political Money and Partisan Clusters in the Capitalist Class (Richard E. Ratcliff, Mary Elizabeth Gallagher and Anthony Kouzi); Elite Social Movement Organizations and the State: The Rise of the Conservative Policy-Planning Network (Michael Patrick Allen); Elite Policy-Planning Networks in the United States (Val Burris); The Coalescence of Corporate Conservatism from 1976 to 1980: The Roots of the Reagan Revolution (Tie-ting Su, Alan Neustadt and Dan Clawson); The Social Organization of the Washington Establishment During the First Reagan Administration: A Network Analysis (Edward O. Laumann, Tony Tam, and John P. Heinz); Power Networks, Professional Societies, and Occupational Health Policy (Earl Wysong and Robert Perrucci); A Two-Stage Model of Policy Making with an Empirical Test in the U. S. Energy Policy Domain (Frans N. Stokman and Jan M. M. Van den Bos); Issue Publics in the U.S.,

German, and Japanese National Labor Policy Domains (David Knoke, Franz Urban Pappi, Jeffery Broadbent, Naomi J. Kaufmann and Yutaka Tsujinaka); Power in Organizations: A Social Network Perspective (Daniel Brass); Pathways into Elite Law Firms: Professional Stratification and Social Networks (Robert Granfield and Thomas Koenig).

Mor-Barak, Michal E. 1991. *Social Networks and Health of the Frail Elderly*. Hamden, CT: Garland.

Research over the last two decades has documented a positive relationship between social networks, social support, and health. However, because of methodological problems, the causal interpretation of these associations has been unclear. This monograph reports results from a study designed to overcome methodological problems in causal explanations. It asks: Does lack of social ties affect health? Are unhealthy people less likely to establish and maintain social ties? Do social networks act as buffers against the negative impact of life events on health? Do they have a direct effect, independent of the presence or absence of major life events? The text presents an analysis of the joint relationship between social network, life events, and the health of the frail elderly and ends with a discussion of the implications for intervention and policy planning.

Nohria, Nitin and Robert G. Eccles. Editors. 1993. *Networks and Organizations: Structure, Form, and Action*. Boston: Harvard Business School Press.

Are entrepreneurial activities easier in some networks than in others? Can electronic networks and other technological media substitute for face-to-face interactions? Are industries such as biotechnology better learning systems because of extensive networking? Do highly networked economies, like Japan's, have a comparative advantage?

Networks are at the core of all organizational life. Shaped by the linkages among individuals, firms, and institutions, they establish patterns that both propel and impede action. Because networks are such a vital component of how organizations function, it has become increasingly important for businesses to understand how they work. In this volume, thirty leading scholars in sociology and management explore the significant link between networks and organized action. Their contributions clarify and expand the latest learning in four broad areas: the relationship between structure and action, the importance of network ties and how varying kinds of ties affect organizing efforts, why and how links form among companies within and industry (biotechnology, in particular), and the rise of different forms of network organization, including the entrepreneurial network firm, small-firm networks, and network-like economies such as those found in Japan, Korea, and Taiwan.

Contents: Introduction. Is a Network Perspective a Useful Way of Studying Organizations? (Nitin Nohria); Section I: Linking Structure and Action. Problems of Explanation in Economic Sociology (Mark Granovetter); The Social Structure of Competition (Ronald S. Burt); Agency as Control in Formal Networks (Harrison C. White); Nadel's Paradox Revisited: Relational and Cultural Aspects of Organizational Structure (Paul DiMaggio); Doing Your Job and Helping Your Friends: Universalistic Norms about Obligations to Particular Others in Networks (Carol A. Heimer); Structural Alignments, Individual Strategies, and Managerial Action: Elements Toward a Network Theory of Getting Things Done (Herminia Ibarra); Section II: Different Network Ties and Their Implications. Centrality and Power in Organizations (Daniel J. Brass and Marlene E. Burkhardt); The Strength of Strong Ties: The Importance of

Philos in Organizations (David Krackhardt); Information and Search in the Creation of New Business Ventures: The Case of the 128 Venture Group (Nitin Nohria); Complementary Communication Media: A Comparison of Electronic Mail and Face-to-Face Communication in a Programming Team (James L. McKenney, Michale H. Zack, and Victor S. Doherty); Face-to-Face: Making Network Organizations Work (Nitin Nohria and Robert G. Eccles); Section III: Organizational Environmental Relations as Interorganizational Networks. Strategic Alliances in Commercial Biotechnology (Stephen R. Barley, John Freeman, and Ralph C. Hybels); The Make-or-Cooperate Decision in the Context of an Industry Network (Bruce Kogut, Weijian Shan, and Gordon Walker); Competitive Cooperation in Biotechnology: Learning through Networks? (Walter W. Powell and Peter Brantley); Section IV: Network Forms of Organizations. The Network Organization in Theory and Practice (Wayne E. Baker); Fragments of a Cognitive Theory of Technological Change and Organizational Structure. (Michael J. Piore); Small-Firm Networks (Charles Perrow); On the Limits of a Firm-Based Theory to Explain Business Networks: The Western Bias of Neoclassical Economics (Nicole Woolsey Biggart and Gary G. Hamilton); The Organization of Business Networks in the United States and Japan (Michael L. Gerlach and James R. Lincoln); Conclusion: Making Network Research Relevant to Practice (Rosabeth Moss Kanter and Robert G. Eccles).

Pattison, Philippa. 1993. *Algebraic Models for Social Networks*. New York: Cambridge University Press.

Addressing the need for new models for the analysis of social network data, the author presents a unified approach to the algebraic analysis of both complete and local networks. The rationale for an algebraic approach to

describing structure in social networks is outlined, and algebras representing different types of networks are introduced. Procedures for comparing algebraic representations are described, and a method of analyzing the representations into simpler components is introduced. This analytic method, factorisation, yields an efficient analysis of both complete and local social networks. The first two chapters describe the algebraic representations of the types of networks, and the third chapter covers the ways in which representations of different networks can be compared. A general procedure for analyzing the algebraic representations is then introduced, and a number of applications of the approach are presented in the final chapters.

Contents: Algebraic representations for complete social networks; Algebraic representations for local social networks; Comparing algebraic representations; Decompositions of network algebras; An analysis for complete and local networks; Time-dependent social networks; Algebras for valued networks; Issues in network analysis.

Rheingold, Howard. 1993. *The Virtual Community: Homesteading on the Electronic Frontier*. New York: Addison-Wesley.

This book provides a thorough, accessible, and enjoyable account of the Net as a social space. Anecdotes from his own net experiences help the author to underscore the principles that encourage the formation of online communities—such as freedom of expression, freedom of association, equality, individual commitment, and sense of self. Communications technologies will continue to facilitate community formation by encouraging interaction among people who could not (or would not) ever meet "in real life." But communication systems can be (and have been) used to restrict the flow of

information and to deny individuals a sense of control over their mediated worlds.

Sassen, Saskia. 1994. *Cities in a World Economy*. Thousand Oaks, CA: Pine Forge Press.

Contents: Place and Production in the Global Economy; The Urban Impact of Economic Globalization; New Inequalities among Cities; The New Urban Economy: The Intersection of Global Processes and Place; Issues and Case Studies in the New Urban Economy; The New Inequalities within Cities; A New Geography of Centers and Margins: Summary and Implications.

Walker, Alan. Editor. *The New Generational Contract: Intergenerational Relations and the Welfare State*. UCL Press

This authoritative text offers an assessment of intergenerational relations and social welfare, examining both the micro-sociological relations within the family and the social contract which forms the backbone of the welfare state.

Wasserman, Stanley and Katherine Faust. 1994. *Social Network Analysis: Methods and Applications*. New York: Cambridge University Press.

Social Network Analysis: Methods and Applications reviews and discusses methods for the analysis of social networks with a focus on applications of these methods to many substantive examples. The book is organized into six parts. The introductory chapters give an overview of the social network perspective and describe different kinds of social network data. The second part discusses formal representations for social networks, including notation, graph theory, and matrix operations. The third part covers structural and locational properties of social networks, including centrality, prestige,

prominence, structural balance, clusterability, cohesive subgroups, and affiliation networks. The fourth part examines methods for social network roles and positions and includes discussions of structural equivalence, block-models, and relational algebras. The properties of dyads and triads are covered in the fifth part of the book and the final part discusses statistical methods for social networks.

Contents: Part I: Networks, Relations, and Structure: Chapter 1: Social Network Analysis in the Social and Behavioral Sciences; Chapter 2: Social Network Data; Part II: Mathematical Representations of Social Networks: Chapter 3: Notation for Social Network Data; Chapter 4: Graphs and Matrices; Part III: Structural and Locational Properties: Chapter 5: Centrality and Prestige; Chapter 6: Structural Balance and Transitivity; Chapter 7: Cohesive Subgroups; Chapter 8: Affiliations and Overlapping Subgroups; Part IV: Roles and Positions: Chapter 9: Structural Equivalence; Chapter 10: Blockmodels; Chapter 11: Relational Algebras; Chapter 12: Network Positions and Roles; Part V: Dyadic and Triadic Methods: Chapter 13: Dyads; Chapter 14: Triads; Part VI: Statistical Dyadic Interaction Models: Chapter 15: Statistical Analysis of Single Relational Networks; Chapter 16: Stochastic Blockmodels and Goodness-of-Fit Indices; Part VII: Epilogue: Chapter 17: Future Directions; Appendix A: Computer Programs; Appendix B: Data.

Wasserman, Stanley and Joseph Galaskiewicz. Editors. 1994. *Advances in Social Network Analysis*. Thousand Oaks, CA: Sage.

Social network analysis, a method for analyzing relationships between social entities, has expanded over the last decade as new research has been done in this area. How can these new developments be applied effectively

in the behavioral and social sciences disciplines? In this volume, a team of leading methodologists in network analysis address the issue. They explore such topics as ways to specify the network contents to be studied, how to select the method for representing network structures, how social network analysis has been used to study inter-organizational relations via the resource dependence model, how to use a contact matrix for studying the spread of disease in epidemiology, and how cohesion and structural equivalence network theories relate to studying social influence. This volume also offers statistical models for social support networks.

Contents: Introduction: Advances in the Social and Behavioral Sciences From Social Network Analysis (Joseph Galaskiewicz and Stanley Wasserman); 1. Network Studies of Social Influence (Peter V. Marsden and Noah E. Friedkin); 2. Epidemiology and Social Networks: Modeling Structured Diffusion (Martina Morris); 3. Statistical Models for Social Support Networks (Michael E. Walker, Stanley Wasserman, and Barry Wellman); Social Cognition in Context: Some Applications of Social Network Analysis (Philippa Pattison); 5. Anthropological Contributions to the Study of Social Networks: A Review (Jeffery C. Johnson); 6. Primate Social Networks (Donald Stone Sade and Malcolm M. Dow); 7. Network Analysis and Computer-Mediated Communication Systems (Ronald E. Rice); 8. Intraorganizational Networks: The Micro Side (David Krackhardt and Daniel J. Brass); 9. Networks of Interorganizational Relations (Mark S. Mizruchi and Joseph Galaskiewicz); 10. Marketing and Social Networks (Phipps Arabie and Yoram Wind); 11. Networks of Elite Structure and Decision Making (David Knoke).

Wenger, G. Clare. 1994. *Support Networks of Older People: A Guide for Practitioners*. Centre for Social Policy Research and Development: University of Wales.

Based on fifteen years' work on the support networks of older people living in the community, this guide presents a network typology and an assessment instrument for the practitioner assessment of network type (PANT). Network type has been shown to be correlated with: all demographic variables; levels of service use; types of presenting problems and responses to interventions. This book shows how network type can be identified on the basis of answers to 8 questions and how community care practitioners can use knowledge of network type to understand problems, predict outcomes and design appropriate interventions. In the context of the current emphasis on assessment of social context and needs-led service provision, it is felt that the short assessment instrument and its predictive value will be widely welcomed by practitioners and managers in the health, social services and independent sectors.

Contents: Preface; Overview; Natural Networks; Networks, Coping Capacities and Presenting Problems; Working with Natural Networks.

White, Harrison C. 1993. *Careers and Creativity: Social Forces in the Arts*. Boulder: Westview Press.

Contents: Introduction; The Pre-Raphaelites. Narratives and Careers. Six Major Shifts of Style. Creativity and Agency. Paths Through Broadway. Professionals and Publics. Conclusion.

Abstracts: DISSERTATIONS & BOOK CHAPTERS

Adler, Nancy and Karen Matthews. 1994. Health Psychology: Why Do Some People Get Sick and Some Stay Well? *Annual Review of Psychology* 45: 229-59.

Contents: Introduction; Social Environment as Contributor to Disease: Stress; Social Connections; Dispositions as Contributors to Disease: Type A and Hostility; Depression, Distress, and Exhaustion; Neuroticism and Negative Affectivity; Optimism, Explanatory Style, and Self-Esteem; Health-Related

Behaviors: Links with Stress and Support; Links with Dispositions; Analytic Issues; Other Influences on Health-related Behaviors; New Health Risks; Physiological Mechanisms: Cardiovascular Reactivity to Stress.

Berscheid, Ellen. 1994. *Interpersonal Relationships*. *Annual Review of Psychology* 45: 79-129.

Contents: Introduction: Generic and Relationship Type Knowledge; Overview; Relationship Cognition: Representation of Self and Others; Relationship Schemas; Attributional Processes in Relationships; Autobiographical Memory; Individual Differences in Relationship Schemas: Security and Trust; Other Developments: Love; Jealousy; Social Support; Relationship Dissolution; Concluding Comments.

Weinberg, Davida. 1994. *Reciprocity Reconsidered: Motivations to Give and Return in the Everyday Exchange of Favors*. Ph.D. Dissertation, Department of Sociology, University of California, Berkeley, CA.

In established relationships, people exchange a variety of resources. Knowing if and when reciprocity matters becomes a difficult cognitive problem. This study samples favors -- acts that should provoke concerns about reciprocation. It tests the effects of position (favor-giver vs. getter), roles, emotional closeness, and exchange histories on respondents' inferences about debt and reciprocity motives. They place little emphasis on reciprocation because they believe givers are compensated by other means.

Interview respondents (105 whites or blacks, ages 21-59) described two favors, one given and one received in different relationships. The 207 favors are practical resources exchanged mostly within four types of roles (38% friends, 20% kin, 20% coworkers, 15% neighbors). These relationships varied in intimacy and

interaction frequency. Respondents define favors as one-sided acts that are costly to give and not required in daily interactions.

While reciprocity should be salient, respondents describe half of the favors without referring to debt or the balance of giving and getting as relevant issues. Those who "keep score" show a bias that reduces their own indebtedness. Favor-givers see themselves as creditors more often than expected; favor-getters tend to think the favors reciprocate for credit they provided in the past.

People give favors for many reasons; inferences about motive tell both partners what to expect of future interaction. Respondents attribute motive using a means-ends or need-reward model. On average, they recognize 2.4 reasons for giving each favor. They infer reciprocity motives in 278 of the favors, but never as the only reason for helping. More often, respondents think givers ease their own discomfort about the getter's need, honor role obligations, express attachment, or obtain simultaneous benefits from the process of giving. Whether acting as givers or getters, their attributions absolve getters of responsibility for reciprocating directly. Both "sides" agree: givers must locate their own rewards intrinsically or from people surrounding the pair. By inferring multiple motives, they identify multiple sources of compensation and reduce givers' risk of ambivalence or exploitation.

Most theorists predict that intimacy relaxes concerns

about reciprocity. This study suggests that roles, not affection, guide attributions of motive. Respondents use "known" elements of roles to ascribe "unknown" intentions and rewards. Their inferences differ significantly across roles, but not by closeness.

Wellman, Barry. 1992. Men In Networks: Private Communities, Domestic Friendships. Pp. 74-114 in *Men's Friendships*, edited by Peter Nardi. Sage: Newbury Park, CA.

Has the movement of North American friendships from public spaces to private homes affected the nature of friendship? My approach to this question is to see how friendships among men fit within a man's personal community network of active relationships, including his ties with kinfolk, neighbors, work mates, and women friends. Instead of assuming that men belong to communities that are traditional solidary groups--such as neighborhoods, kinship groups, or cliques of buddies--I treat each man as the center of his own Ptolemaic universe (see Figure 5.1). To set in perspective the analysis of friendships between men, I compare them with other community ties, such as women's friendships, friendships between men and women, and ties with kin, neighbors, and workmates.

Wellman, Barry and David B. Tindall. 1993. How Telephone Networks Connect Social Networks in Progress. In *Communication Sciences Volume XII* edited by William D. Richards, Jr. and George A. Barnett. Ablex Publishing Corporation: Norwood, New Jersey.

Our attention in this chapter is on how the widespread use of the telephone affects interpersonal relations with friends, neighbors, relatives and workmates. We consider this important, pervasive, and yet unstudied communication medium from a number of perspectives. Our analysis answers questions such as: Does the telephone play an important role in maintaining relationships and community, or is it an adjunct of face-to-face communication? What extent and intensity of

communication between community members can the telephone sustain? Can long-distance relationships operate solely, principally, or partially through telephone contact? Along the way we describe our methodological approach to the study of these issues.

Contents: I. Telephones, Community, and Networks; A. Communities as Personal Networks; B. Telephone Networks and Personal Community Networks; II. The East York Study; A. Units of Analysis; B. Intimates and Significant; C. Key Variables in the East York study; III. The Pervasiveness of the Telephone; A. Respondent Characteristics; B. Social Support; IV. Telephone Connections; A. Contact and Distance; B. The Strength of Relationships; C. Role Type; D. Network Characteristics; V. How Telephone Networks Keep Social Networks Connected; VI. Telephone Networks and Social Networks in the Global Village.

Yamaguchi, Kazuo. 1994. Some Accelerated Failure-Time Regression Models Derived From Diffusion Process Models: An Application to a Network Diffusion Analysis. From *Sociological Methodology 1994*. Peter V. Marsden. Editor. Cambridge MA: Blackwell.

This paper introduces a new class of accelerated failure-time regression models derived from an equation satisfied by a group of diffusion processes. Several new models are derived. The most general model, which we call the generalized Hernes model, has three shape parameters, in addition to parameters that represent covariate effects on the acceleration of diffusion. This model includes as special cases the log-logistic model, the logistic model, and models that we call the extended Hernes model and the generalized logistic model. The extended Hernes model has two shape parameters and is a regression-extension for the Hernes model. The generalized logistic model also has two shape parameters and is an extension for the log-logistic and logistic models based on the Box-Cox transformation.

How to use...

SOCNET

Electronic Discussion Forum

SOCNET is a LISTSERV list. A LISTSERV list is essentially an automated mail forwarding system in which subscribers send mail to a central address and it is automatically rebroadcast to all other subscribers. The purpose of SOCNET is to allow network researchers worldwide to discuss research and professional issues, make announcements, and request help from each other. Membership in SOCNET costs nothing and is available to all members of INSNA.

Joining SOCNET

To join SOCNET, send an email message to listserv@nervm.nerdc.ufl.edu that says the following in the first line of the body of the message: SUBSCRIBE SOCNET <your name>. For example:

SUBSCRIBE SOCNET Steve Borgatti

The LISTSERV software at NERVM will then add your name and email address to the list, and send you back a message confirming your membership. If you do not receive a confirmation message back, contact Steve Borgatti (Steve.Borgatti@scarolina.edu) or Russ Bernard (ufruss@nervm.nerdc.ufl.edu).

If you are at a BITNET site, there is an even easier way to sign up. Type the following at your CMS command prompt: TELL LISTSERV AT NERVM SUB SOCNET <your name>. For example:

TELL LISTSERV AT NERVM SUB SOCNET Gery Ryan

A minute or so later, you should receive a confirmation in response.

Using SOCNET

Once you are subscriber, to send a message to all SOCNET subscribers, just send email to the internet address

socnet@nervm.nerdc.ufl.edu

or to the bitnet address socnet@nervm. Your message will automatically be broadcast to all SOCNET subscribers.

Options

To permanently remove yourself from SOCNET, send a message to listserv@nervm.nerdc.ufl.edu with the following command in the body of the message:

SIGNOFF SOCNET

Important note: this message, like all LISTSERV commands, should be sent to the LISTSERV (address listserv@nervm.nerdc.ufl.edu) and not SOCNET. If you send it to SOCNET, it will not sign you off, and everyone on SOCNET will get a message from you that says "SIGNOFF SOCNET".

To see who else is subscribed to SOCNET, send the REVIEW SOCNET command to the LISTSERV. You can have the list sorted by country, last name, node id and user id, if you like, by sending a command of the form REVIEW SOCNET (BY <fieldname> as follows:

REVIEW SOCNET (BY COUNTRY)
REVIEW SOCNET (BY NAME)
REVIEW SOCNET (BY NODE)

How to use...

INSNALIB

Electronic Library

The purpose of INSNALIB is to enable network researchers to conveniently exchange data, software and articles. INSNALIB is a collection of computer files accessible via anonymous **ftp**. Most computers that have email capability also have **ftp** capability. Ftp provides a way to log on to a remote computer and transfer files to or from that computer. An important feature of **ftp** is the ability to transfer files in **binary** format, which means that the transferring software does not try to translate the contents of the file into a format appropriate for the destination computer. Consequently, we can use a mainframe (or any other computer) as a storage area for all kinds of files including wordprocessing documents, spreadsheets, databases, etc.

Quick Example of Downloading a File From INSNALIB

Suppose we want to copy a file called **freemap.exe** from the library. To download this file, follow this procedure (what you type is in **boldface**, what the computer responds is in *italics*):

```
ftp thecore.soc.y.sc Carolina.edu           {start ftp and connect to INSNALIB computer}
USER: anonymous                             {when asked for user or account name, type "anonymous"}
>cd /pub                                     {change directory to the INSNALIB reading area where all files are kept}
>binary                                       {tell ftp that you are downloading a binary file rather than a simple text file}
>get freemap.exe                             {copy the "freemap.exe" file to your account}
>quit                                         {exit ftp}
```

As explained below, the file **freemap.exe** is a self-extracting zip file. This means that it is basically an archive that contains a number of separate files, including executable programs, source code, sample inputs and outputs, and documentation. To unpack the archive, make a new directory for the material (e.g., at your DOS prompt type **cd \mapstuff**), copy the archive to that directory (**copy freemap.exe \mapstuff**), change to that directory, (**cd \mapstuff**), and execute the file (type **freemap** at the DOS prompt). The result will be the creation of a series of files.

Quick Example of Uploading a File to INSNALIB

Suppose we want to copy a file from your computer called **mypaper.wp** to the library, for submission to *CONNECTIONS*. Follow this procedure (what you type is in **boldface**, what the computer responds is in *italics*):

```

ftp thecore.socy.scarolina.edu                                {start ftp and connect to INSNALIB computer}
USER: anonymous                                             {when asked for user or account name, type "anonymous"}
>cd /incoming                                               {change directory to the INSNALIB writing area}
>binary                                                       {tell ftp that you are uploading a binary file rather than a simple text file}
>put mypaper.wp                                             {copy the "mypaper.wp" file from your computer to the library}
>quit                                                         {exit ftp}

```

Please note that since files are uploaded to the **/incoming** directory, but are downloaded from the **/pub** directory, any files that you upload are not immediately available for downloading to others. This is appropriate since many files that you may upload, like submissions to *CONNECTIONS*, are not meant to be made available to everyone. After uploading a file to the library, you should send a note to insna@scarolina.edu to announce its arrival.

Also, do not include the **binary** keyword if you are uploading an ASCII text file.

Structure of INSNALIB

Most of the files on INSNALIB are self-extracting zip files. This permits us to collect together a series of related files into one downloadable package and at the same time compresses the files so that they occupy less space. Self-extracting zip files are binary files that must be transferred using the **binary** option in **ftp**. If you omit the **binary** command, **ftp** will try to translate the file into ASCII characters, which will completely destroy it. Self-extracting archives are recognizable by the ".exe" extension.

A few other files are binary as well. Wordprocessing documents, such as those created by WordPerfect or Microsoft Word, are binary. So are spreadsheets and all executable programs. In fact, the only files that are not binary are text files, which in INSNALIB are normally identified by a ".txt" extension.

One key file in the library that is not binary is **contents.txt**, which provides a table of contents for all files in the library. **Contents.txt** gives the name of each file, a short description of its contents, and an indication of whether it is binary or not.

Some Notes on FTP

Once you have established an **ftp** connection to a computer, you can get a listing of files in the current directory by typing "dir" at the **ftp** prompt, as in the following example:

```

ftp thecore.socy.scarolina.edu
USER: anonymous
>cd /pub
>dir
contents.txt          freemap.exe          stocentz.exe
ecosna.exe           sun94.exe
>get contents.txt
>quit

```


Note that in this example, we did not use the **binary** keyword since the file being downloaded was an ASCII text file.

When copying a file from the library, you can rename it at the same time by giving a second argument in the GET command. In the following example, the file **sun94.exe** is renamed **sunbelt.exe** as it is copied:

```
ftp thecore.socy.scarolina.edu
USER: anonymous
>cd /pub
>dir
contents.txt      freemap.exe      stocentz.exe
ecosna.exe        sun94.exe
>binary
>get sun94.exe sunbelt.exe
>quit
```

To copy a file to the library from your computer, use the **put** command instead of **get**. **IMPORTANT NOTE:** the **\pub** directory is write-protected. You cannot **put** any files there. Instead, you must change to the **\incoming** directory, as follows:

```
ftp thecore.socy.scarolina.edu
USER: anonymous
>cd /incoming
>binary
>put c:\ucinet\ucinet.exe ucinet.exe
>quit
```

Note the (optional) use of a full pathname to identify the source file.

Online help on using **ftp** may be obtained by typing **help** from the **ftp** command line to get a list of topics, followed by **help <topic>** to get help on a specific topic.

```
ftp thecore.socy.scarolina.edu
USER: anonymous
>help
.....list of topics appears here.....
>help dir
.....information on the dir command appears here.....
>quit
```

Post It!

CALL FOR PAPERS

I am organizing a session on social networks for the annual meeting of the Canadian Sociology and Anthropology Association at the Learned Societies conference, to be held in early June, 1995 in Montreal.

— Peter Carrington

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Phone 519 888 4567 ext. 3961; fax 519 746 7326. Email: pjc@watarts.uwaterloo.ca.

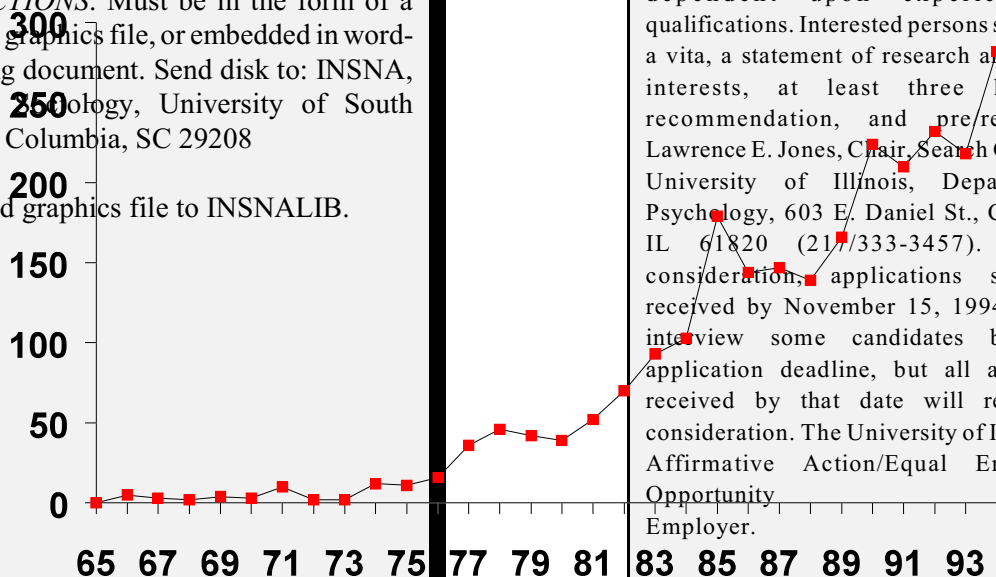
Terminal Node

Growth of Social Networks

ELECTRONIC ARTWORK

We need artwork, preferably related to networks, to use in future covers of *CONNECTIONS*. Must be in the form of a computer graphics file, or embedded in word-processing document. Send disk to: INSNA, Dept. of Psychology, University of South Carolina, Columbia, SC 29208

Or, upload graphics file to INSNALIB.



JOB ANNOUNCEMENT

The Department of Psychology, University of Illinois at Urbana-Champaign invites applications for two tenure-track positions at the Assistant Professor level. Applications are welcome in any area of Psychology that is concerned with the effects of social factors on individual behavior. Relevant specialties include, but are not limited to, attitudes and social cognition, decision and group processes, personality assessment, personal relationships, and social or personality development. The primary criteria for these appointments will be excellence in research and teaching. Ph.D. required. The positions will begin August 21, 1995. Salary is dependent upon experience and qualifications. Interested persons should send a vita, a statement of research and teaching interests, at least three letters of recommendation, and pre-reprints to Lawrence E. Jones, Chair, Search Committee, University of Illinois, Department of Psychology, 603 E. Daniel St., Champaign, IL 61820 (217/333-3457). For full consideration, applications should be received by November 15, 1994. We may interview some candidates before the application deadline, but all applications received by that date will receive full consideration. The University of Illinois is an Affirmative Action/Equal Employment Opportunity Employer.

Source: Sociological Abstracts