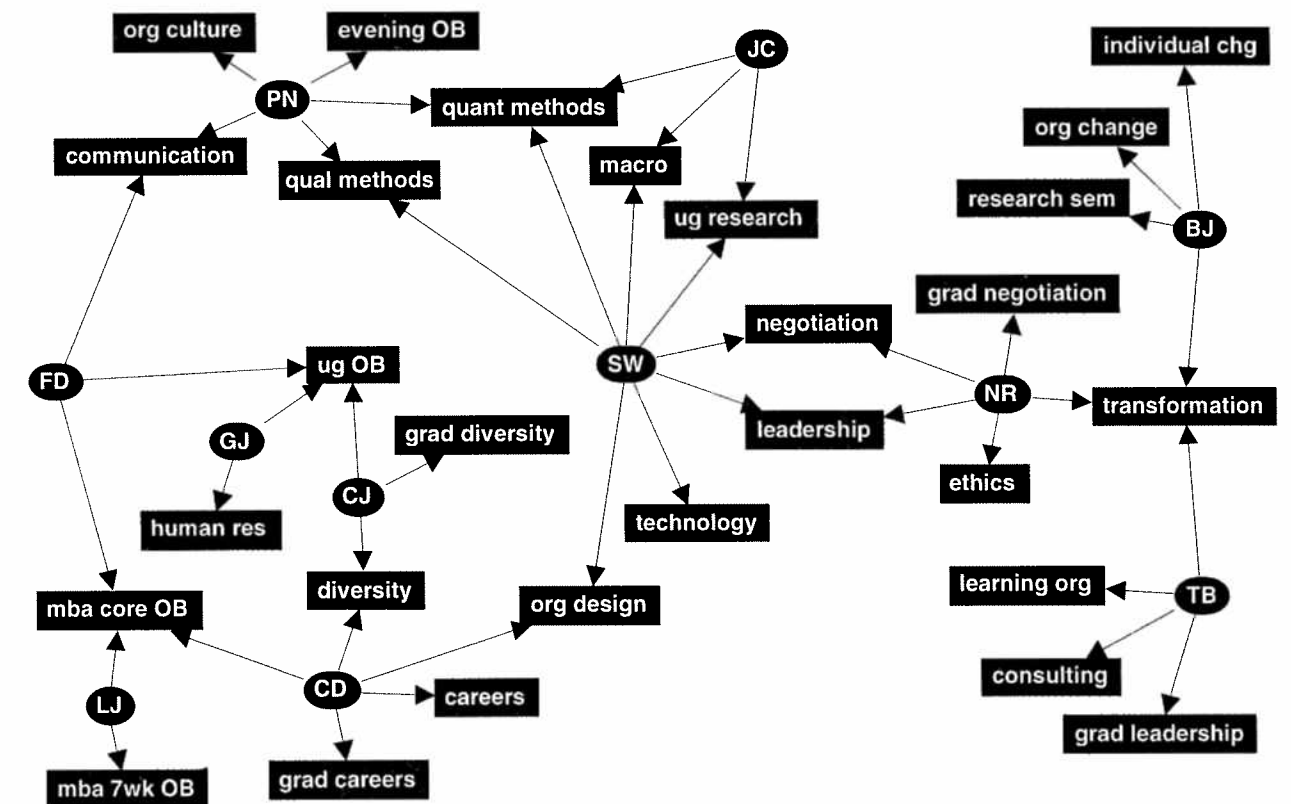


CONNECTIONS

October 1995 Volume 18 Issue 2



A Note on the Ancestral Toronto Home of Social Networks

The Meaning of Knowing As a Network Tie

Interorganizational Networks and the Changing Employment Contract

Measuring Densities Based Upon Foci of Activity

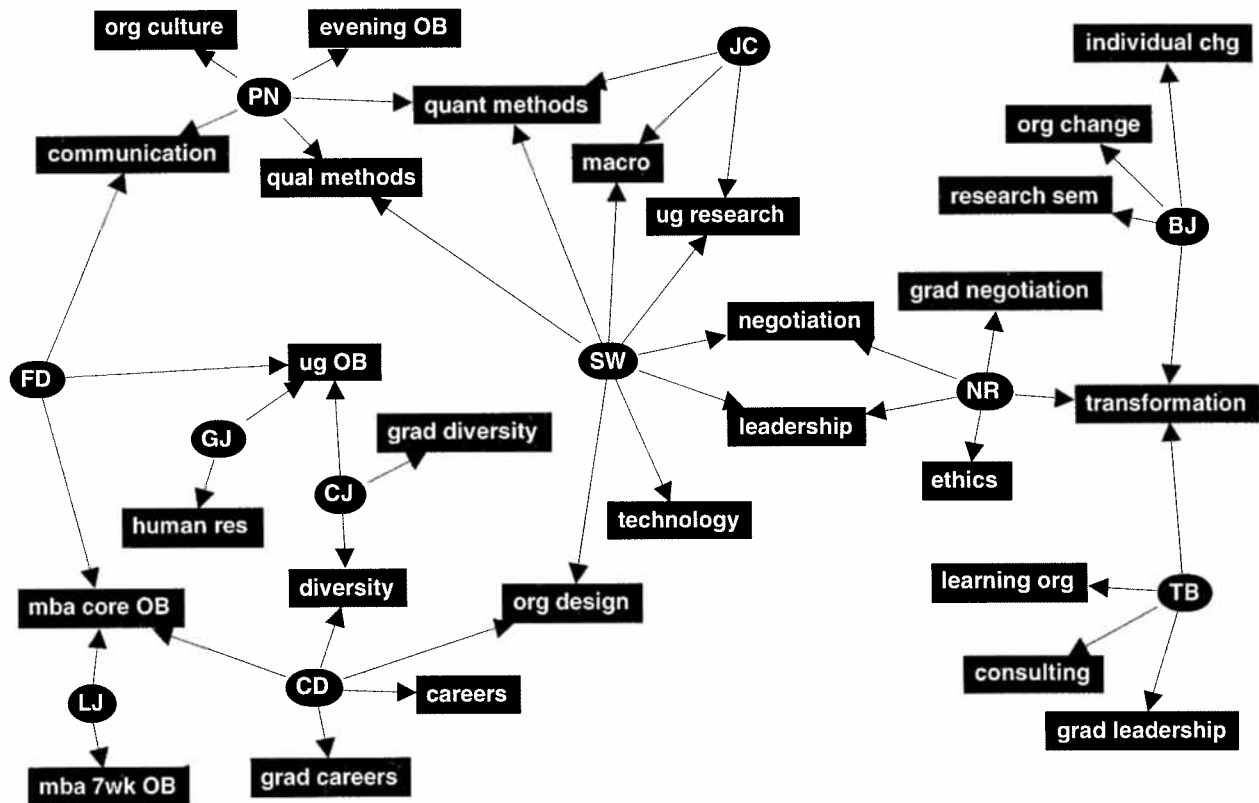
ネットワーク研究のための国際ネットワーク
 국제 쏘살 네트워크 연구회
会网络分析国

Międzynarowa Sieć Analizy Sieci Społecznych
 International Network for Social Network Analysis
 Internationaal Netwerk voor Sociale Netwerkanalyse
 Internationales Netzwerk zur Analyse sozialer Netzwerke
 Le Réseau International pour l'Analyse des Réseaux Sociaux
 Asociación Internacional para el Análisis de las Redes Sociales



CONNECTIONS

October 1995 Volume 18 Issue 2



A Note on the Ancestral Toronto
Home of Social Networks

The Meaning of Knowing
As a Network Tie

Interorganizational Networks and the
Changing Employment Contract

Measuring Densities Based Upon
Foci of Activity

CONNECTIONS

October 1995 Volume 18 Issue 2

CONNECTIONS

Publisher
Stephen P. Borgatti

Editors
John V. Skvoretz
Katherine Faust

European Editors
Frans Stokman
Tom A.B. Snijders

Editorial Board
Phillip Bonacich
Scott Feld
Joel Levine
(Others to be appointed)

Editorial Assistant
Claire Youngblood

Editorial Offices
Sociology Dept.
U. of South Carolina
Columbia, SC
29208 USA

CONNECTIONS is published twice annually by the International Network for Social Network Analysis (INSNA), Sociology Dept., University of South Carolina, Columbia, SC 29208 USA. Telephone: (803) 777-3140. **Postmaster:** Send address changes to INSNA, Sociology Dept., University of South Carolina, Columbia, SC 29208 USA

Mission. CONNECTIONS is an official publication of INSNA. Its primary purpose is to support network analysis in general and INSNA members in particular by providing a method of pooling and sharing news about the membership, tools for teaching and research, data for analysis and results of scientific investigations. Wherever possible, items referenced in CONNECTIONS (such as data and software) are made available electronically on **INSNALIB** (accessible by anonymous ftp from host **thecore.soc.y.scarolina.edu**, directory **/pub**) and via our WWW site **http://thecore.soc.y.scarolina.edu/insna.html**. The web site provides access to a directory of members' email addresses, network datasets, software programs, and other items that lend themselves to electronic storage. In addition, the web site provides updated information on upcoming conferences.

Policy. CONNECTIONS welcomes short articles, data, software, course materials, news and advertisements dealing with network analysis. Articles are peer-reviewed and will be edited for content and style. Authors are automatically granted the right to republish their material in other journals or books, provided appropriate citation is made.

Contributions. All materials should be submitted in electronic form, either via email (**connections@scarolina.edu**), INSNALIB, or IBM-compatible diskettes. This includes all text, figures and tables in articles (files may be sent in any wordprocessing and/or graphics format). Articles and other text materials should also be accompanied by printed versions (2 copies). Send contributions to CONNECTIONS, Dept. of Sociology, University of South Carolina, Columbia, SC 29208 USA. Telephone: (803) 777-3123. Fax: (803) 777-5251. Email address: **connections@scarolina.edu**.

Subscription. The standard subscription fee is US\$40 per volume (\$25 for students). Subscribing to the current volume is synonymous with obtaining current membership in INSNA. Send subscription requests to: INSNA, Sociology Dept., University of South Carolina, Columbia, SC 29208 USA. Telephone: (803) 777-3140. Fax: (803) 777-5251. Email: **insna@scarolina.edu**. Checks must be made payable to "INSNA" and drawn on a US bank. Wire transfers are not permitted, but Visa and Mastercard (or Eurocard) are accepted. Credit card orders must include card number and expiration date.

Copyright. CONNECTIONS is protected by both United States Copyright Law and International Treaty provisions. All rights are reserved. It is CONNECTIONS policy to automatically grant authors the right to republish articles in other journals.

Cover: Metadesign® graphic based on layout by KrackPlot network drawing program. Network depicts the "who wants to teach what course" relation.

NEWS

Calendar	1
Announcements	2
International Social Network Conference	4
Network News / <i>Stephen P. Borgatti</i>	8
Ties and Bonds / <i>Barry Wellman</i>	9

ARTICLES

A Note on the Ancestral Toronto Home of Social Network Analysis <i>Linton C. Freeman and Barry Wellman</i>	15
The Meaning of Knowing as a Network Tie <i>Chris McCarty</i>	20
Interorganizational Networks and the Changing Employment Contract <i>Arne L. Kalleberg, David Knoke and Peter Marsden</i>	32
Measuring Densities Based on Foci of Activity <i>Scott Feld</i>	50

DEPARTMENTS

Techniques: Treating 2-Mode Data as a Network <i>Stephen P. Borgatti</i>	53
--	----

ABSTRACTS

Articles and Chapters 56
 Books 74
 Dissertations 90

TITLES

1995 American Sociological Association 91

MISCELLANEOUS

How to use SOcNET 94
 How to use INSNALIB 95
 Post It! 98
 Terminal Node 99

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 and web browsers. 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. Any DOS-based wordprocessing format is acceptable, but WordPerfect 6.1 is preferred. It is especially important to include electronic versions of all figures and tables.

1995/1996 Events

	1995	1996
JANUARY	Workshop on Rational Choice Theory and Networks 1/26 - 1/28, The Hague	American Economic Assoc. Jan 5-7. San Francisco, CA
FEBRUARY		International Social Networks Conference 2/22 - 2/25, Charleston, SC
MARCH	West Coast Conf. for Small Groups March 25. Santa Barbara	Southwest Social Science Association Houston, TX Nonlinear Dynamics & Econometrics March 15-17. Boston
APRIL	Political Economy of the World System April 20-22. Coral Gables	Western Social Science Assoc. April 26-29. Oakland, CA
MAY	Cliometric Society May 19-21. Lawrence, Kansas	European Social Science History May 9-11. THE NETHERLANDS Population Association of America May 9-11. New Orleans
JUNE	Canadian Socy & Anthro Assoc. Montreal INPR Conference June 1-5. Williamsburg CSS95: Computing for the Social Sciences June 16-21. UC-San Diego Classification Society of North America June 22-25. Denver	Int'l Network on Personal Relationships June 29 to July 3. Seattle, WA
JULY	International Social Networks Conference 7/6 - 7/10, London	Social Science Methodology July 1-4. Colchester, UK
AUGUST	American Sociological Association Aug 19-23. Washington D.C. American Political Science Assoc. Aug 31-Sept 3. Chicago	American Sociological Association Aug 10-14. Chicago American Political Science Assoc. Aug 29-Sept 1. San Francisco
SEPTEMBER	Interdisciplinary Students of Organizations Sept 15-17. UNC-Chapel Hill Text Analysis and Computers Sept 18-21. Ludwigshafen, GERMANY	
OCTOBER		
NOVEMBER	American Anthropological Assoc. Nov 15-19. Washington, D.C. Social Science History Association Nov 16-19. Chicago	American Anthropological Assoc. Nov 20-24. San Francisco, CA
DECEMBER		

MEETINGS

International Network on Personal Relationships (INPR). *Saturday June 29 to Wednesday July 3, 1996 Seattle, WA*

The goals of the 1996 INPR conference include continuation of interdisciplinary work on personal relationships, discussion of current issues concerning relationship scholars, and exploring innovations for future research. For more information contact:

Barbara Sarason
Dept. of Psychology
University of Washington
Box 351525
Seattle, WA 98195-1525
Tel: (206) 543-6786
e-mail: bsarason@u.washington.edu

Valerie Manusov
Tel: (206) 543-7854
e-mail: manusov@u.washington.edu

Annual Meetings of the Southwest Social Science Association. *March 1996, Houston Texas.*

Session Title: Emotions, Rationality, and Decision-making: Developing Trends in Symbolic Interaction and Postmodern Discourses.

Subject Matter: Recent developments in Postmodern and Symbolic Interaction theories have challenged conventional views which conceptualized the self as a rationally self-interested maximizer of utility. These new trends have largely attempted to incorporate emotions, habitual behaviors, and cognitive patterns into a more holistic view of the human person. This session seeks to explore these new developments (as well as both

linear and non-linear models of the self), and discuss how they may fill gaps in the social psychological body of literature.

Those interested in presenting a paper during this session should submit a two to four page abstract to the organizer by October 15, 1995. Completed papers will not be necessary until March, 1996.

Timothy M. Chester, Organizer and Chair
Department of Sociology
Texas A&M University
College Station, Texas 77845-4351
(409) 862-1548 (Office)
(409) 862-4657 (Fax)
TMC7049@TAMVM1.TAMU.EDU (Email)

Society for Nonlinear Dynamics and Econometrics & Eastern Economics Association. *Boston, MA, March 15-17, 1996.*

Topics of interest to the society include the derivation or application of non-linear techniques to characterize or forecast dynamic economic phenomena.

Participants must register for the EEA conference (\$95 for non-members) and provide for their own expenses. To obtain a registration form, contact the Eastern Economics Association directly:

Voice: (401) 232-6470
Fax: (401) 232-6720
E-mail: cscott@acad.bryant.edu
Snail Mail:
Eastern Economics Association
Bryant College
Smithfield, RI 02917

To give a paper, send an abstract via E-Mail to: jaditz_t@bls.gov

We prefer that submissions arrive via e-mail; if necessary, you can send your abstract via regular mail to

Ted Jaditz
Bureau of Labor Statistics
Room 3105
2 Massachusetts Ave., NE
Washington, DC 20212

European Social Science History Conference. *9-11 May 1996 De Leeuwenhorst Noordwijkerhout, The Netherlands*

Conference secretariat
ESSHC c/o CAOS
W.G. Plein 475
1054 SH Amsterdam
The Netherlands
Tel: +31 20 616 51 51 Fax: +31 20 689 09 81

OTHER

ANNOUNCEMENTS

Edited Volume. We invite submissions to be published in a planned volume of collected papers addressing the usefulness and applicability in the social sciences of theories incorporating the concept of chaos and the related concepts of complexity and self-organization, tentatively entitled *Chaos, Complexity, and Sociology: Myths, Models, and Theories of Chaos and Complexity in Society.*

Abstracts and paper submissions should be sent to the following address:

Sara Horsfall
Department of Sociology
Texas A&M University
College Station, Texas 77843-4351
email: sth8987@acs.tamu.edu
phone: (409) 862-4650 / (409) 846-9655

"Intelligence" Online: Free copy on request. The founding editor of "Intelligence Newsletter," Olivier Schmidt (olivier_schmidt@email.francenet.fr; tel/fax 33 1 40.51.85.19) and his team of international correspondents specialized in information on security and intelligence have created the online electronic fortnightly "Intelligence" (IN).

Charter subscription prices are US \$280 per year (23 issues including a complete annual index) payable in U.S. dollars or in French Francs to the ADI (16 rue des Ecoles, 75005 Paris, France). A special combined subscription for both the email and hard copy versions is available for US \$350.

New WEB Site for Group Processes Research. Although it's cross-linked to the INSNA home page, I wanted to announce a brand new web site: the *Virtual* Center for the Study of Group Processes:

<http://www.uiowa.edu/~grpproc>

Please check it out and then send me your suggestions, contributions, links, etc. I'd really like to see this site grow and evolve into something useful for all group researchers!

Barry Markovsky
Dept. of Sociology
U. of Iowa
Iowa City IA 52242
e-mail: barry-markovsky@uiowa.edu

1996 INTERNATIONAL SOCIAL NETWORKS CONFERENCE

Hawthorn Suites Hotel, Charleston, South Carolina
February 22-25, 1996

Deadline for abstracts: December 15, 1995

The Conference: The International Social Network Conference is a major forum for social scientists, mathematicians, computer scientists, and all others interested in social networks. The conference provides an opportunity for individuals interested in theory, methods, or applications of social networks to share ideas and common concerns. Sponsors of the conference are the International Network for Social Network Analysis (INSNA) and the Department of Sociology at the University of South Carolina.

The Program: Current session topics include: Corporate and Interorganizational Networks; Intraorganizational Networks; Personal Community Networks; Networks and Health; Diffusion; Networks Through Time; Social Support; Cognitive Networks; Biological Networks; AIDS; Communication Networks; Network Exchange; Methods and Statistics for Network Analysis. This list is preliminary. If you wish to organize a session, contact the organizers at the addresses below.

The Keynote Speaker: Bonnie H. Erickson, Professor at the Centre for Urban and Community Studies in the University of Toronto will deliver the keynote address entitled "The Structure of Ignorance."

Workshops: Planned workshops include: Steve Borgatti and Martin Everett's *Introduction to the Analysis of Network Data*; Frank Harary's *Graph Theory Basics — the Heart of Network Analysis*; and Barry Wellman's *A Non-Technical Introduction to Social Network Analysis*. See detailed descriptions on the page after next.

To Submit A Paper: To submit a paper, send an abstract of no more than 200 words by email or in an ASCII file on diskette for DOS platforms and a hard copy to one of the organizers no later than December 15, 1995. Submission of more than one multiple-authored paper is acceptable. However, we may need to limit program participation to the equivalent of one single-authored paper per person.

Katie Faust
Department of Sociology
University of South Carolina
Columbia, SC 29208
katie-faust@scarolina.edu
(803) 777-3123

John Skvoretz
Department of Sociology
University of South Carolina
Columbia, SC 29208
skvoretz-john@scarolina.edu
(803) 777-4968



Arrangements

The Setting: The Hawthorn Suites Hotel is located in the heart of Charleston, adjacent to the old Slave Market and within walking distance of fine restaurants and shops, historic homes, Waterfront Park, and the Battery.

Hotel Reservations: Call 1-800-527-1133 or 1-803-577-2644 with a credit card number to make reservations at the Hawthorn Suites. The fax number is 1-803-577-2697. Be sure to mention the International Network for Social Network Analysis to get the conference rate. All accommodations are suites. Rates are \$95.00 for a one bedroom/two double beds suite and \$180.00 for a two bedroom suite plus taxes of 10%. (There is an extra charge of \$15 for a third person sharing a room.) All suites have a couch that converts to a bed. The room rates include a breakfast buffet and an afternoon reception with complimentary beer and wine daily except Sunday. Valet parking is currently \$9.00 per day.

Transportation: Charleston has its own international airport, which is serviced by Delta, USAir, Continental and others. The airport is a 20-minute drive from the hotel. Taxicabs are available (\$16 plus tip), plus two shuttle services. Shuttle rides may be arranged in advance, or called from the airport. The services are:

- Low Country Limousine (1-803-767-7117)
\$9 One Way
- Charleston Shuttle (1-803-767-7117)
\$7.50 One Way



Conference Registration: Pre-registration is \$45.00 for INSNA members, \$60.00 for non-members, \$25.00 for students, and \$15.00 for registration-in-absentia for INSNA members (\$30.00 for non-members). All fees will be \$5.00 higher for registration at the conference. Payment may be made by checks drawn on US banks or credit card (MC/Euro, VISA/Barclay only). Make checks payable to INSNA.

Additional Note: The Winter Meetings of the Methods Section of the American Sociological Association will be held February 25-26, 1996 at the Mills House Hotel in Charleston, SC (just a few blocks from the Hawthorn Suites). For further information, contact Chris Winship, Department of Sociology, Harvard University, Cambridge MA 02138 or winship@isr.harvard.edu.

Workshops

Stephen Borgatti and Martin Everett: *Introduction to the Analysis of Network Data.* A beginner's tutorial on the concepts, methods and data analysis techniques of social network analysis. The course begins with a general introduction to the distinct goals and perspectives of network analysis, followed by a practical discussion of network data, covering issues of collection, validity, visualization, and mathematical/computer representation. We then take up the methods of detection and description of structural properties such as centrality, cohesion, subgroups, cores, roles, etc. Finally, we consider how to frame and test network hypotheses. An important element of this workshop is that all participants are given a free copy of UCINET IV and KRACKPLOT software, which we use to provide hands-on experience analyzing real data using the techniques covered in the workshop. Participants also receive a glossary of network terminology, a set of detailed exercises (with answers), and a set of lecture notes. In order to participate fully in the workshop, participants should bring laptop computers so that they can run the analyses on their machines at the same time that they are demonstrated by the instructors. (Thursday 8:30-4:00) **Cost: \$50 for students, \$100 for all others.**

Frank Harary: *Graph Theory Basics, the Heart of Network Analysis.* The four most basic concepts of graph theory for applicability to social networks are: (1) tree structures and types of centrality; (2) connectivity and flows in networks; (3) colorability and its application to scheduling problems; and, (4) signed graphs and balanced structures. It is planned to open with a survey of various methods for presenting the information contained in a graph, such as various matrices and relations. Then practice exercises in all four of the listed topics will be given. No specific previous mathematical knowledge is required, but a strong feeling of motivation asserting that the powerful methods and crystal clear concepts of the mathematical theory of graphs can be most helpful as logical models in all the social sciences. (Saturday 12:00-3:00) **Cost: \$30.**

Barry Wellman: *A Non-Technical Introduction to Social Network Analysis.* 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-modeling, 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. (Friday 12:00-3:00) **Cost: \$30.**

Registration Form

Send completed form with payment or credit card details to:

Sunbelt XVI / Skvoretz
 Department of Sociology
 University of South Carolina
 Columbia SC 29208 USA

Your Name: _____
 Mailing Address: _____

 Email: _____

OPTION TO JOIN INSNA:

Regular INSNA membership fee at \$40
 Student INSNA membership fee at \$25

CONFERENCE PREREGISTRATION:

Regular INSNA member at \$45
 Regular non-member at \$60
 Student at \$25
 In-absentia INSNA member at \$15
 In-absentia non-member at \$30

BANQUET:

\$28 per person for _____ persons

WORKSHOP FEES:

Borgatti and Everett (\$50 students, \$100 others)

Harary (\$30)

Wellman (\$30)

TOTAL PAYMENT:

Enclose a check payable to "INSNA" or credit card information for Visa/Barclaycard or Master/Eurocard:

Credit Card No. _____ Exp. Date _____ Signature: _____

Network News is a regular column whose function it is to disseminate news about INSNA, the professional association for social networks researchers.

Conference. Next year's International Social Networks Conference will be held February 22-25, 1996 at the Hawthorn Suites Hotel in Charleston, South Carolina, USA. The conference is being organized by John Skvoretz (skvoretz-john@sc.edu, 803-777-4968) and Katie Faust (katie-faust@sc.edu). The deadline for submitting abstracts is December 15, 1995.

Charleston is a terrific city for a conference. The downtown area, where the conference will be held, is jam-packed with excellent restaurants, bars, and shops. The area is quite old and extremely attractive. It is a great place to go walking.

The Hawthorn Suites hotel is a very pleasant, unpretentious place with really nice rooms. The only curious thing about it is that it does not have a bar. This is not too much of a problem, however, as there are several bars less than a block away.

Students may want to consider the Days Inn Historic District motel, which is just two blocks from the Hawthorn. The room rate is \$69 (+10% tax), 1-4 persons occupancy. For reservations, call the hotel directly at 803-722-8411. There is no special conference rate.

Subscriptions. This would be a good time to send in your checks and credit cards for your 1996 membership. Remember that back issues for most years are still available. The price is \$30 for volumes before 1995, and \$40 for the 1995 volume. It is especially important to renew your *Social Networks* subscription now, because Elsevier is slow to make changes and hates to send out back issues.

World Wide Web page. Mark Dawson (Dept. of Anthropology, University of South Carolina) has created a very nice world wide web site for INSNA. The address of the home page is: <http://thecore.socy.sc.edu/insna.html>.

Currently, the web site provides access to all the same files as INSNALIB, plus a lot of other interesting stuff. For example, all the information on the social networks conference contained in this CONNECTIONS is also on the web page. Check the page for new information as it is available. The page also contains links to Charleston tourist pages with information about restaurants, beach rentals, musical events, and so on.

The INSNA home page also contains links to the home pages of individual networkers, and laboratories, journals, software sites and universities that are of interest to networkers. For example, there is a link to Barry Markov-sky's *Virtual* Center for the Study of Group Processes.

SOCNET. The good news is that SOCNET traffic has increased enormously since last April. The bad news is that a lot of it has been *spamming*. This, however, should no longer be a problem, as the list has now been closed to non-subscribers. (Closing the list will not stop anyone that really wants to send something to SOCNET, but it will keep out automatic broadcasts that are sent to all lists.)

The list currently has about 300 subscribers. 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.

— Stephen P. Borgatti
steve.borgatti@sc.edu

by Barry Wellman

BBS

Scot Wortley (Soc, U Toronto) has received a SSHRCC 2-year postdoctoral fellowship. He'll take at the Centre for Criminology, U Toronto... **Milena Gulia** (Soc), **Nancy Nazer** (Soc) & **Caroline Haythornthwaite** (Communic) at U Toronto have each won an Ontario Graduate Scholarship.... **Len Pearlin** has retired from U California - San Francisco & started at Soc, U Maryland, 9/95. He's teaching 1 seminar per year & spending much of his time directing a large NIH-funded project on caregiving.... **Susan Gonzalez Baker** from a Fulbright in Spain to Soc, U Texas. (Which reminds me of the time a foreign student applied for a fellowship, but said he wasn't so smart, so he'd settle for a Halfbright.).... **Clayton Mosher** from UBC to Asst Prof of Soc, Washington St.... **Mark Granovetter** from Northwestern to Stanford Business School, 9/95. Guess a rolling stony brook gathers no moss.... **Douglas McAdam** (U Arizona) nominated for Vice-Pres, AmSocAssoc.... **Ed Laumann** (Soc, U Chicago) serving 2nd term as editor of Am J of Soc.... **Dafna Carmeli** awarded Ph.D. by Soc, Hebrew U. Now teaching at Haifa U, but will soon head a social science dept at the kibbutz movement's institute.... **Clifford Clogg** died of a heart attack, May 6, 1995.... **Fleur Thomese** appointed Asst Prof, Soc, Free U of Amsterdam. Her dept is leaving its charming Prins Hendrikslaan 29 mansion, 12/95, to move closer to the rest of the Free U campus. New address: Boelelaan 1083c, Amsterdam. While we're on the subject of Amsterdam addresses, did you know that early modernism meets postmodernism where James Waatstraat intersects with Foucaultstraat....

John Skvoretz (Connection's editor & Soc, U South Carolina) won the university's 1994 Educational Fdn Award for outstanding research in the humanities & soc scis -- the 1st time since the award's start in 1984 that a sociologist has won it.... **Martin Bulmer** has moved from U Southampton to Prof of Soc, U Surrey.... **Sharon Zukin** (Soc, CUNY) elected chair of AmSocAssoc's Community & Urban Soc section.... **Christine Nippert-Eng** (Ph.D., Soc, SUNY-Stony Brook) now on faculty of Illinois Inst of Technology.... **Ray-May Hsung** (Tunghai U, Taichung) has received a 1 year Taiwan National Sci Fdn grant to study in Germany during her sabbatical.... **Andrew Walder** moved from Soc, Harvard to Stanford.... **Steve Cole** has moved from Soc, SUNY-Stony Brook to U Queensland, Australia. His email is s.cole@mailbox.uq.oz.au... **Richard Hall** (SUNY-Albany) has taken over from Steve the editorship of Sociological Forum.... **Richard Alba** (also SUNY-Albany) has become chair of Soc & elected Pres of Eastern Soc Sty.... **Barry Wellman** (Soc, U Toronto) appointed head of the Am Soc Assoc's Cttee on Electronic Networking, 9/95-8/96.... **Paul Bernard** (Soc, U Montreal) appointed to the Council of the Soc Sci & Humanities Res Council of Canada: they're the final decision-making body, reviewing the disciplinary panels of this major granting agency. Paul is also a member of the National Statistics Council....

Bill Christian teaching at Dept de Antropologia Social, Edifici B, Facultat de Lletres, Universitat Autònoma de Barcelona, 98193 Bellaterra (Barcelona), fax: +34-3-851-1140. When not there, he's living in the Canary Islands.... **Sy Spillerman** to be at Soc, Hebrew U, Jerusalem, Spring, 1996.... INSNA Chief & Coordinator **Steve Borgatti** spending the

1995-1996 sabbatical year at the Management Schl, Boston College.... **Shinsuke Ohtani** has received his Ph.D. from Tsukuba University. His thesis on personal communities in Japan has been published in book form by Mineruba Press (Kyoto). Ohtani is now Prof. of Sociology at St. Andrew's (Momoyamaga-kuin) Univ., Izumi (where the first part of Shogun is set), near Osaka.... **Angelina Woon Ki Yuan** (Applied Soc Sci, HK Poly) received her Ph.D. from U Hong Kong (Soc Work) for studying support networks in Beijing....

Lea Shamgar-Handelman (Soc, Hebrew U), a specialist in family networks, died in Jerusalem, 4 Aug 95, after a long bout with cancer.... **Jim Coleman** (Soc, U Chicago), 68, died of cancer 3/95 after a lengthy illness.... **Nan Lin** spending part of his 1995-1996 sabbatical in San Francisco; tel 415-982-1214, fax: 415-984-0929.... **John Delaney** (former Yale modeller of job searches -- see Wellman & Berkowitz book) is now director of marketing for all Sears credit cards. What a Discovery!... **Shinji Nozawa** is now visiting our Centre for Urban & Community Studies, U Toronto, Toronto, Canada M5S 2G8. Fax: 416-978-7162; email: jssnoza@epas.utoronto.ca.... **Rosemary Blieszner** (Fam St, VA Poly) is chair of the Future Conferences cttee of the Int'l Sty for the Study of Personal Relationships.

American Sociological Association Stuff

Maureen Hallinan is the new pres of the ASA, (I can testify that she's a joy to work with), **Joe Feagin** (U FL) elected to the Council, **Wendy Griswold** (U Chicago) is on the Pubs Cttee & **Bernice Pescosolido** (U IN) on the Nominations Cttee.... I (**Barry Wellman**) have been asked to head an ASA Advisory Group on electronic networking.... With respect to ASA awards: **Wilma Dunaway** (CO St) received the whole society's Dissertation award for "The Incorporation of Southern Appalachia into the Capitalist World Economy, 1700-1860.".... The Culture section

voted as best article, **Mustafa Emirbayer** (New Schl) & **Jeff Goodwin's** (NYU) "Network analysis & the culture of agency" (AJS 99: 1411-54) -- obviously they didn't consult me about this. **Michael Mayfield Bell** won the section's book award for Childerley: Nature & Morality in a Country Village (U Chicago Pr).... **Peter Rossi** won the Methodology section's distinguished contribution award for his work on how families move & bond (plus lots of other stuff).... **Ezra Zuckerman** (U Chicago) won the OrgOcc& Work section's award for a grad student paper, "Social Contagion in the Health Policy Domain" -- a secondary analysis of Laumann & Knoke's data....

SHORT SHTICKS

How to Disconnect a Weak Tie: In this Community Liberated age, many people use cellphones to maintain footloose relationships. But how to get rid of someone who lingers too long on-line, chewing up big bucks. Julian, my cellphone salesperson, knows the way: "I'd really like to keep talking but my phone battery is dying."

Homeless but Wired: The Outrider, a Toronto newspaper sold by the homeless, now has an email address.

Revise and Resubmit: Here's how Umberto Eco thinks a publishing company would have responded to a draft of the Bible: "action-packed, [the 1st few hundred pages] have everything today's reader wants in a good story. Sex (lots of it, including adultery, sodomy, incest), also murder, war, massacres, and so on.... It seems to have something for everybody, but ends up appealing to nobody.... The editor's name, by the way, doesn't appear anywhere on the manuscript, not even on the table of contents. Is there some reason for keeping it a secret?" [Anonymous refereeing? In Eco's Misreadings

by way of Tim Chase in the U Toronto Varsity, 9 March 95].

The Interest Rate is High, but the Backing Suspect: Hebrew U, Jerusalem has a "Michael Milken Award" for outstanding teaching.

Structuralism Explained: "The aim in all cases is to simply and clarify unwieldy data so that their underlying structure is revealed. Only then, perhaps, can it be explained." E.C. Pielou, Mathematical Ecology. Big sign at the San Diego Supercomputer Center. [That "perhaps" is the tricky part.] I was also pleased to see that the U California - San Diego has an Institute for NonLinear Science.

"It's Not Who You Know, It's Who Knows You." T-shirt seen in San Diego during the Computing and Social Sciences conference, 6/95.

Attributes vs. Relationships: "Did you hear about the famous symbiotic law firm of Solomon & O'Rourke? Solomon knows the law, but O'Rourke knows the judges!" [heard on BBC-TV while at the London network conference, 7/95.]

Weaving Together Networkers: David Morgan (aka hjdm@psuorvm.cc.pdx.edu) is putting together a list of academics who have their own Web pages.

Best Unintended Joke at the Network Conference: "Language is usually transparent to us," Harrison White. [Yes, but not to readers of Identity and Control.]

Iron Bars Do Not a Prison Make: Venezuela's former pres., Carlos Andres Perez, now spends his time under house arrest (for stealing \$17M in govt funds) chatting on the internet. "I've effectively escaped from my prison through the cybernetic outlet, he says." [Washington Post, 29 Sept 95].

New Market: Ethan Michelson (U Chicago Soc grad student) emailed from China to report that the 2 hottest areas among Academy of Sociology grad students in Beijing are social network analysis and rational choice. Sounds like all of the years of hard work by Nan Lin and associates are bearing fruit.

Who Does What to Whom: Socialism is when the government helps people and organizations who need help. Capitalism is when the government helps people and organizations who don't need help. [Cynical thought I had when I heard about how conservative California governor had poured millions into the San Diego Development Corp. to promote better services between corporations.]

Wonder Who Were the Discussants: The "Voluntary Protection Program Participants Assoc" had a conference at the Washington Hilton, 8/95. These are the people in hiding for testifying against the Mafia, etc. What's next: Smiley's People?

Self-Help: "[A] great craftsman, asked to decide Which was his greatest work, replied, Simply with these two words, 'My next' For 'ever better' was his text" — Charles Padget Wade, eccentric, wealthy Englishman who built Snowhill Manor, Cotswolds, England, and stocked it with every kind of intricate artifact.

Couplings: Kurt Vonnegut was a student of Robert Redfield at U Chicago Anthro. Guess the karass came from "The Folk Society." See Vonnegut's Wampeters, Fomra, and Granfaloon (Opinions), says Darret Rutman in his Small Worlds, Large Questions, p. 292. Rutman, BTW, dedicates his book to Hari Seldon, and uses much network thought in his historical analyses.

Global Village: "It is the rainy season & I am on my motorcycle, lost in the bush. I fly blindly over the top of a hill & down into a small ravine where the road used to be. The

bike has landed on my leg, it is getting dark, it has been hours since I've seen anyone. I hear steps. Three young men, hunters, appear out of the forest. They lead me down a path to a small village. I sit at 1 end of a long bamboo bench, across from the senior men of the village. 'Where are you from?' one asks. 'New York,' I say. They look at one another. The oldest motions for a young boy to bring me an orange. As he hands it to me, looking away shyly, he whispers: 'Do you know Michael Jordan?'" This item in *The Urban Age* (a 3rd world newsletter), 2/95 in an account by Paul Berczeller of his stay in Equatorial Guinea. The timing was perfect: I read it the day that Michael returned to pro basketball.

Global Village: Seen in Amsterdam, 4/95, near Centraal Station: "8397 miles to Wall Drugs."

Semitic Affairs: Posted on the wall of the Soc Dept., Hebrew U, Jerusalem: "The strongest drive is not Love or Hate. It is one person's need to change (no, edit) another's copy."

And a New York Variant: What is Microsoft's position on anti-semitism? To probe this, call up the "Wingdings" (symbol) font in MS-Word or WordPerfect and type "NYC" (as in "New York City", in caps).

High Network Density: "Our women are just like Western ones. The only difference is Russian women cheat more and change partners more often." [Yelena Myasnikova, editor of the Russian edition of *Cosmopolitan*, quoted in *Newsweek* 8 May 95].

Time Budget

All those who've worked around him know that not only has Chuck Tilly been a great inspiration, he has put in more hours per day/year/decade than any known soul. (However, Andrew Walder claims to have beaten him one day by arriving at 6 AM on

Christmas Day.) Workaholism is clearly a communicable disease, shared by all of Chuck's students. So for Toronto's Tillyfest, I calculated the amount of time that Chuck Tilly has inspired: 150 scholars (50 at each of 2 festschrifts plus an estimated 50 others who couldn't make either) each working 60 hours per week and 50 weeks per year for a mean scholarly career of 10 years (counting current students & those as old as me) = 4.5 million hours or 1,500 person-years of work inspired by Chuck Tilly.

Cats, Canaries and Land Use

Having the recent (7/95) network meeting at the Docklands was nostalgic for me because the ownership of neighboring Canary Wharf is an important Canadian story. To oversimplify, Toronto's then-richest family, the Reichmann brothers, bought Canary Wharf through their Olympia & York organization. They razed the derelict dock areas (relics of Britain's empire) and built fancy new office buildings. (Nationalists noted that all of the building and street names in the area had English-Canadian resonances: Cabot, Mackenzie, *et al.*)

As there is a severe shortage of London offices with all modern conveniences (including with mixer taps), the Reichmann's figured there would be huge demand for their huge buildings. As no mass transit served the area, the British state agreed to build a new system, the Docklands Light Rail. Then the British office market turned down and the state was slow to build the DLR. Light demand and no transit meant that Canary Wharf remained nearly empty, and eventually went bankrupt. The bankruptcy dragged down the Reichmann's O&Y empire in Canada and the US. (They were NYC's largest private landowner.)

Now the story gets interesting. A consortium of banks, many British, took over bankrupt Canary Wharf. Mass transit got built quickly,

tenants moved in, and Canary Wharf stopped losing money. In essence, the British state did for the (partially-British) bankers what they hadn't done for the previous Canadian owners. To rub it in, the banks' holding company is called "Cheshire," as in the cat that swallowed the canary.

For those of you who think that capital knows no borders, the above example should once again drive home the moral that state interests strongly affect capital. But not entirely! Soon after the network conference, in late October, the Reichmanns (who are ultra-orthodox Jewish), together with an Arab prince and some US friends, were once again negotiating to buy Canary Wharf, this time from the bankers. Capital apparently has no religious affiliation.

The above tale should provide some inkling about the large contradictions in our conference hotel, the Britannia International. The building and furnishings were quite luxurious, the service was poor. My surmise is that this was an upmarket hotel built to serve the rich businesspeople who were expected to visit Canary Wharf. Hence the fancy fixtures and large rooms. When Canary Wharf faltered and business guests didn't show up, then the hotel's services went quite downmarket — serving tourist groups and network conferences. Hence the service straight out of the Fawlty Towers. I've written a letter of complaint to management and am still waiting for a reply as of 27 Oct 95.

For all his problems with the NY Yankees, George Steinbrenner knows how to run a good hotel in Tampa: the Bay Shore Inn where we've met frequently.

Yet the London weather was glorious, far better than recent Tampa meetings. This leads me to question once again why we have taken "Sunbelt" out of our conference name. Let's be serious, but not take ourselves too seriously.

Down & Up & Down with Clyde

One of the seriously fun things in London was reconnecting with Clyde Mitchell. But some of us got alarmed because Clyde was feeling poorly and had to return early to Oxford. It was just a temporary bug, and Clyde was in fine shape when he & Jean went to see "The Cherry Orchard" in Stratford with Bev & myself only 3 nights later. More recently, Jean reports that Clyde had what might be a stroke in late Sept, and will be at a rehab. hospital for several months. [Address: 25 Staunton Rd, Headington, Oxford OX3 7TJ, UK; email: clyde@vax.oxford.ac.uk]

Mexican Hit Parade

Jorge Gil Mendieta dedicated (9/95) the Laboratorio de Graphics in the Instituto de Investigaciones en Matematicas Aplicadas y en Sistemas at UNAM (Universidad Nationale Autonomous de Mexico.) The purpose of this lab is to facilitate research into social networks (redes sociales) in Mexico & Latin America.

In his opening remarks, he listed those who have "que han impreso su sello en esta nueva revolución" [impressed their marks on this new revolutionary field]. Here's his list:

1. Lin Freeman
2. Frank Harary
3. Barry Wellman
4. Larissa Lomnitz
5. Steve Borgatti
6. Martin Everett
7. Russ Bernard
8. Al Wolfe
9. Stan Wasserman
10. Katie Faust
11. Pat Doreian

Interesting to see what others we could come up with. The only other one I know of was in the Hummon & Carley article in *Social Networks* a few years back. But names like

Harrison, Chuck, Georg, Clyde, Jim, John & Jim-Sam-Paul (the original triad) pop into my mind (plus a dozen others if I thought about it for more than 10 seconds). The interesting thing about such lists is that they focus my attention on who's not on. As they say in the BMW email network, YMMV.

Journal Stuff

History of the Family is a new interdisciplinary journal, edited by 2 structuralists: Tamara Hareven (Family Studies, U Delaware) & Andrejs Plakans (History, Iowa St). The board includes Peter Laslett, Emmanuel LeRoy Ladurie, Alice Rossi, Richard Smith, Charles Tilly and Charles Wetherell. Subs: \$60, JAI Press, 55 Old Post Rd #2, PO Box 1678, Greenwich CT 06836.

The American Journal of Sociology just sent me a flyer publicizing their 101st volume. Four of the 5 items mentioned are structural: Claude Fischer with a 20-year assessment of the subcultural theory of urbanism, Peggy Giordano on adolescent friendship circles, Pamela Popielarz & Miller McPherson on niches & overlap in voluntary association membership, and a symposium on market transitions with Victor Nee, David Stark, Yu Xie & Emily Hannum. The editor's name? Ed Laumann.

Social Psychology Quarterly is another journal doing the right thing (after years of not). Ed Lawler (Indus Rel, Cornell) is the editor; Barry Markovsky & Peggy Thoits are the deputy eds, and Robert Leik is on the board. Lynn Smith-Lovin (Soc, U AZ) & Cecilia Ridgeway (Soc, Stanford) are doing a special issue on gender & social interaction.

Conference Stuff

The Canadian Sociology & Anthropology Assoc has its conference, 2-5 June 96 at Brock

U, St. Catharines, Ont — handily located near Niagra Falls, Stratford & Toronto. Peter Carrington (Soc, U Waterloo) is organizing a social networks session: pjc@uwaterloo.ca. Many of the other sessions are into PoMo & subjectivism, but Lynne Phillips (Soc/Anthro, U Windsor) is doing one on globalization & free trade, Susan Belcher El-Nahhas (Soc, U Alberta) is doing 1 on world debt, Michael Rosenberg & Deena White (Soc, Dawson Col, Montreal) on the integration of immigrants, Bill Carroll (Soc, U Victoria) on social movements, & Richard Day (Soc, Simon Fraser; day@sfu.ca) on complexity & social theory.

The Society for Chaos Theory in Psychology & Life Sciences has 470 members worldwide & does the INSNA kind of thing: newsletter, conf, bulletin board. They're also thinking about starting a journal. Their next conference is in San Francisco, 6/96. For info, contact Stephen Guastello, pres., Psych, Marquette U, PO Box 1881, Milwaukee, WI 53201-1881; tel: 414-288-6900; fax: 414-288-5333; email: 6155guastell@vms.csd.mu.edu

The International Conf. on Personal Relationships will meet in beautiful Banff, Canada, 4-8 Aug 96. If you hurry, you can still get on the program by contacting Beverley Fahr, uowbaf@ccm.umanitoba.ca.

Need Information? News?

Try the INSNA www home page:

<http://thecore.socy.sc.edu/insna.html>

The INSNA web page is updated regularly. Use it to get the latest on the Charleston social networks conference.

A Note on the Ancestral Toronto Home of Social Network Analysis¹

Linton C. Freeman
University of California, Irvine

Barry Wellman
University of Toronto

Who Originated the Originator?

As structuralists we cannot avoid speculating about the structural antecedents of current ideas about structure. For example, it seems likely that Harrison White's training at Harvard helped Ron Breiger and Chris Winship to become structuralists. The same is true of Katie Faust and Steve Borgatti who came out of the networks program at U.C. Irvine.

But how do we think about Elizabeth Bott, a major innovator in structural thought? At first glance, her structural outlook seems to be primarily her own creation. In 1957 she produced a revolutionary book on family structure and social networks that grew out of her dissertation at the Tavistock Institute and the London School of Economics. Certainly, the L.S.E. has never been a center of structuralist thought. Was the founding mother of social network analysis herself a virgin birth?

There was some Mancusian involvement. While working at the Tavistock, Bott attended some of Max Gluckman's seminars at the University of Manchester and presented her research into class division and the allocation of domestic tasks (Gluckman 1971). John (J.A.) Barnes attended some of those same seminars and presented some of his network research on a Norwegian village (1954). According to Bott (1995), they were both delighted to find themselves on the same track. And Clyde Mitchell (1995) recalls much stimulating discussion between them.²

¹In digging all of this up, we received a great deal of help and support from Elinor Fillion, a reference librarian at the University of Toronto, Paul Gregory, then the information specialist of the Centre for Urban and Community Studies, University of Toronto, and from Clyde Mitchell (University of Oxford emeritus), one of our founding fathers.

²Bott acknowledged both Gluckman and Barnes in her book, *Family and Social Network* (1957). Among the others she cited are Raymond Firth, Meyer Fortes, Edmund Leach, Michael Young, Erving Goffman and Ted Newcomb. Bott noted that A. T. M. Wilson, a medical psychoanalyst, "supervised the project as a whole," and that J. H. Robb, a social psychologist, did the greater number of home visits that formed the data base for the work.

In any case, Bott's work made a major contribution to structural thinking. She introduced the notion that the structural form of the network in which a married couple was embedded could itself affect the marital role performances of the husband and wife. She introduced the idea of measuring a structural property, what we now call network density. In terms of structural thinking, these ideas went beyond what Gluckman and Barnes had done.

We are left, then, with a question about the origins of Bott's innovative thinking. As structuralists ourselves, we do not want to believe that structural analysis sprang up "out of the blue." We here present evidence that the origins of Bott's thought are not to be sought solely in her graduate experience.

Progenitors

Father: Let's go back to Elizabeth Bott's beginnings. Our founding mother was born and raised in a structuralist Toronto home. Her father, Edward A. (Ned) Bott was the founding head of the Department of Psychology at the University of Toronto. Consistent with Toronto's British cum monarchical tradition, Professor Bott *père* headed the department for thirty-four years after its inception in 1926. He was a gifted teacher and the founding president of the Canadian Psychological Association in 1940. In those days, Toronto psychology was quite different from its present-day pure-science fixation on experiments and cognition. Bott's group was noted for "applying psychological knowledge to a wide variety of community problems, ranging all the way from the healthy development of the normal child to the treatment of mental retardation, mental illness and juvenile delinquency." (Sloan 1969).

In World War I, Edward Bott helped develop new and ingenious methods of muscle re-education for disabled soldiers. In 1947, he was honored with an appointment as an Officer of the Order of the British Empire (O.B.E.) for his development of World War II training procedures for the Royal Air Force. In the words of one observer, Bott "showed an unbelievable genius for getting himself involved in the consideration of all sorts of human problems at all levels within the services and in government. . . . He had an incredible talent for seeing beyond the immediate and obvious precipitating factors, more remote and more important general conditions which also needed study" (Myers 1954). The same words could well be used to describe his daughter Elizabeth's leap from the analysis of the division of labor between husbands and wives to discerning the general importance of structural form.

Mother: Elizabeth Bott's mother, Helen McMurchie Bott, received her B.A. in 1912 and her M.A. in 1923, both at the University of Toronto. Helen McMurchie married Ned Bott in 1917 and they had three daughters: Mary Louise (1918), Barbara Helen (1920) and Elizabeth Jane (1924).

Helen McMurchie Bott was a leader in founding the Institute for Child Study (still the University of Toronto's "laboratory school"), and she was the head of parent education there until 1938. She wrote and co-authored two books with William Blatz that focused on studies of young children.

Elizabeth Bott was an early student at ICS. In the school's annals, Elizabeth is noted as being the first child (possibly in all of Toronto) to wear a snowsuit. Her mother was keen on Elizabeth getting daily fresh air, even in the cold Toronto winters (Raymond 1991).

Structuralism's Early Steps

In 1928 a report coming out of the University of Toronto described a study of play activities among the preschool children at the St. George School.³ In this study, each child was designated a "focal" individual. Multiple observers recorded every instance in which a focal child (1) talked to another, (2) interfered with another, (3) watched another, (4) imitated another, or (5) cooperated with another. The name of the other child to whom the social behavior was directed was also recorded. Each of these five sets of observations was organized into a child-by-child matrix that displayed the frequency with which a kind of interaction linked pairs of children.

This study embodied several major structuralist innovations. It appears to be the first example of the use of systematic observation to collect data on a specified range of interpersonal behavior. And, so far as we can discover, it is the first use of the matrix format to organize such who-to-whom data. Indeed, it was almost twenty years later that Elaine Forsyth and Leo Katz (1946) introduced matrix notation into what was then called "sociometry."

This report demonstrated the advantages of analyzing a matrix to uncover some structural properties of the interaction patterns of the children. It addressed such questions as "with which individual each child [has] ... made the most numerous contacts" (p. 63), and it noted that some pairs of children had "special reciprocal companionships" (p. 64).

The whole flavor of this work was structural. In a period when other investigators confined their analyses strictly to the study of the traits of individuals, this research was many years ahead of its time. It was not, in fact, until six years later that J. L. Moreno (1934) published his first book on sociometry.

This research had been conducted by a young woman with an M.A. who had been a Lecturer in Child Psychology at the University of Toronto since the early 1920s. In 1925, she was appointed Instructor in charge of the Parent Education Division of the newly-founded experimental St. George School for young children—later the Institute of Child Study at the University of Toronto (Raymond 1991).⁴

³The article reporting on this research is "Observations of Play Activities in a Nursery School," *Genetic Psychology Monographs* 4 (1928): 44-88.

⁴In 1938, she left ICS after its head, William Blatz, objected to her involvement with the Oxford Group, a precursor "Moral Rearmament Movement" (Raymond 1991: 144).

Origins Revealed

The author of this pioneering structuralist research, of course, is Helen McMurchie Bott, and her third daughter is our own Elizabeth Bott. Thus the origins of her structuralism lie not only in England, but in her Toronto home. Elizabeth Bott was born into a structuralist intellectual milieu, one that actually studied things and didn't just talk about them. Given this kind of background, we have found the strong structural tie that may well have been the origin of her subsequent structuralist perspective.

In addition, we have uncovered evidence for the later birth of even more structuralist thought at the University of Toronto. Ned Bott, Helen's husband, was strongly tied to his frequent collaborator C. K. Clarke, the medical director of the Canadian National Committee for Mental Hygiene. Decades later (1967), Barry Wellman came from being a Harvard graduate student to Toronto in order to co-direct the first East York social network study. Its quite supportive home was the [C.K.] Clarke Institute of Psychiatry, a newly-founded research institute. So Wellman's structuralism was indirectly nurtured by Helen Bott, via Ned Bott and C. K. Clarke, and not only by Charles Tilly and Harrison White.⁵

And finally, we have to add that in the late 1940's when Elizabeth Bott was a graduate student in the Anthropology Department at the University of Chicago, Lin Freeman, who was still an undergraduate, was a member of her social circle. They were together often and spent a great deal of time discussing a range of topics that covered most of social science. Thus, one cannot easily discount the clear implication that Freeman's later involvement with social networks grew out of that early contact.

References

- Barnes, J.A. 1954. "Class and Committees in a Norwegian Island Parish." *Human Relations* 7: 39-58
- Bott, Elizabeth. 1957. *Family and Social Network*. London: Tavistock.
- _____. 1995. Personal communication.
- Bott, Helen McMurchie. 1928. "Observations of Play Activities in a Nursery School." *Genetic Psychology Monographs* 4: 44-88.
- Forsyth, Elaine and Leo Katz. 1946. "A Matrix Approach to the Analysis of Sociometric Data: Preliminary Report." *Sociometry* 9: 340-347.
- Gluckman, Max. 1971. "Preface" [to the second edition of Elizabeth Bott, *Family and Social Network*]. London: Tavistock.

⁵See Richardson and Wellman (1985) for a more extended argument as to why Canada, as a geographically and socially complex but non-imperial nation, is a fertile source of structuralist thought. For Wellman's accounts of his origin myth, see Wellman (1993, 1994). Also wending their way (through chain migration) to the Department of Sociology at the University of Toronto in the late 1960s and early 1970s were S.D. Berkowitz, Bonnie Erickson, Harriet Friedman, Leslie Howard, Nancy Howell, William Michelson, and Lorne Tepperman plus Edward Shorter in History, all Harvard students of either Charles Tilly or Harrison White.

- Mitchell, J. Clyde. 1995. Personal Communication.
- Moreno, Jacob L. 1934. *Who Shall Survive?* Washington, D.C.: Nervous and Mental Disease Publishing Co.
- Myers, C.R. 1954. "The Professor in the RAF." Memo to D.C. Williams. January 19.
- Raymond, Jocelyn Motyer. 1991. *The Nursery World of Dr. Blatz*. Toronto: University of Toronto Press.
- Richardson, R.J. and Barry Wellman. 1985. "Structural Analysis: The State of the Canadian Art." *Canadian Review of Sociology and Anthropology* 22: 771-793.
- Sloan, E.P. 1969. "Citation for the [Canadian] Centennial Medal [for Edward Bott]." Canadian Psychological Association, November 14.
- Wellman, Barry. 1993. "An Egocentric Network Tale." *Social Networks* 15: 423-436.
- _____. 1994. "I was a Teenage Network Analyst: The Route from The Bronx to the Information Highway." *Connections* 17 (2):28-45.

The Meaning of Knowing as a Network Tie

Christopher McCarty
University of Florida

Introduction

In 1969, Mitchell focused our attention on the multiplexity of network ties. Each tie between two network alters, he said, might comprise several "strands." Two people might be connected by kinship, or debt, or affect, or any number of other links.

The importance of multiplexity was understood immediately by researchers in the field, as was the fact that some links were clearly stronger than others. In his study of scientists, for example, Friedkin (1980) differentiated between ties based on people saying that they had *read* one another's work and their actually *citing* one another's work. Erikson (1981) distinguished between college students being able to *recognize* one another (from pictures) and their claiming to *like* or *interact* with one another. Mitchell (1987) distinguished tie strength between homeless women based on things like whether they gave one another practical support. Wellman (1979) describes many different strands in the ties of East Yorkers.

In fact, recognizing the importance of multiplexity in network ties, researchers have developed different, quite specific, network generators. Burt (1984) asked people to focus on the alters with whom they "discuss important matters." McCallister and Fischer (1978) focused on ties defined by acts of social support ("Who could you leave your house with if you were going out of town for a few days?"). And so on.

The most exhaustive work on the multiplexity of network ties was done by Burt (1983). Through a secondary analysis of data collected by McCallister and Fischer, Burt uncovered five dimensions of social relationships: friendship, acquaintance, work, kinship and intimacy. He further suggested that these dimensions were not mutually exclusive, and were frequently associated with the concepts of "confusion between contents," "substitutability of contents" and "content ambiguity." These concepts categorized the types of errors which network analysts might be subject to in applying single word cues to elicit network ties among respondents.

"...it seems likely that there would be subcultures within which people understood relations in a similar way, but across which a single word or phrase could refer to quite different qualities of interaction." (pg. 49)

In the same volume, McCallister and Fischer critiqued the use of general terms such as "best friend" and "close", pointing to the potential for respondents to interpret them in varying ways. Still, most ego-centered research is based on asking people some form of the question

"Who do you *know* ...?" where the blank is filled in with things like "who could lend you a hundred dollars" or (in studies of very old people) "who could take you shopping?"

In this article, I raise some questions about the use of the word "know." What exactly do we get when we generate ties in this way? Is knowing itself multiplex? And what is the measurable error which we can expect when knowing is used to define network ties?

In what follows, I summarize three studies that shed some light on this question. The first is an in-depth descriptive study that focused on defining "differences in knowing" of people. In the other two studies, these differences were tested with representative samples.

Study 1: *Method*

I started with the notion that the concept of "knowing" was interpreted differently by different people. My goal was to elicit these differences with a minimum of experiment effect. To do this, I asked 47 respondents to free list 60 people they knew, given a loose definition of knowing. Respondents only had to "know" their listed alters by sight or name. Alters had to be alive and respondents had to be able to contact their alters. Alters had to know respondents by sight or by name (reciprocal knowing). After free-listing the 60 alters, respondents rated each alter, on a scale of 1 to 5, on how well they knew each, where a 1 was the lowest level of knowing and a 5 the most. In all, the 47 respondents selected and rated 2,820 alters.

Following the rating procedure, respondents were asked to think of examples of the types of people to whom they assigned the various levels of "knowing," and to describe in general terms what type of person corresponded to a level. My assumption was that, having used these rating levels 60 times, the descriptions would divulge understanding of knowing. I hoped to learn, for these 47 people, the criteria they used in assigning a higher or lower level of knowing to their network alters.

Study 1: *Results*

Reading through the 235 responses (one description for each of 5 levels for all 47 respondents), I decided on 11 dimensions that were represented. These dimensions were defined subjectively, and to some extent, were influenced by the knowledge of the results from the studies listed above. Although another coder might come up with more or fewer dimensions, this is not critical to the purpose of this study. Assuming that another coder would perceive most of these dimensions (an assumption that is supported by earlier research), these dimensions serve the purpose of showing how they vary by levels of "knowing," the single word tie measure.

On average, respondents used 4.3 dimensions (SD 1.6) in their descriptions of the five levels, frequently expressing more than one dimension per level. All of the analyses are based on the presence or absence of dimensions for each respondent, and not on the number of times dimensions were used.

Table 1. Distribution of knowing dimensions across respondents.

Dimension	Percent Who Used Dimension					
	Overall	Level 1	Level 2	Level 3	Level 4	Level 5
Friendship	64	9	15	32	43	45
Frequency of contact	57	23	34	36	21	6
Know personal data about alter	55	9	11	13	36	57
Family/Relative	55	2	0	13	15	45
Closeness	51	0	11	9	21	34
Acquaintance	40	26	15	4	0	0
Duration of tie	30	11	4	15	11	17
Know factual data about alter	30	13	11	9	4	9
Work, Business, School	28	4	11	9	6	2
Via (Know through someone)	13	4	4	2	2	0
Depth of discussions	9	13	15	20	15	17

Table 1 shows the number of respondents who used each of the 11 dimensions and the distribution of the dimension over the five knowing levels¹. For example, the dimension of "friendship" was mentioned by 64 percent of the respondents over all knowing levels, and by 45 percent of the respondents on knowing level 5. This means that 45 percent of the respondents somehow thought of the idea of friendship when assigning knowing level 5 to alters.² Friendship increases with knowing level, so that those whom we know at low knowing levels are frequently not friends, and those at high knowing levels are. Unfortunately, friendship is conceptually nondescriptive.³ If friendship had been coded into the categories of "friend"/"not friend", there might be more differentiation, but in this study most of those listed were considered friends.

¹Compare these 11 dimensions to those found by Burt. The fact that these dimensions were developed from respondent text independent of Burt's dimensions lends support to their validity.

²Note that in all cases the frequency of dimension use counts the dimension whether it is used positively or negatively. Thus, saying level 1 is for friends, or level 1 is for people who are not really friends will both be counted as use of the "friend" dimension.

³In Burt's examination of content ambiguity, he found the dimension of friendship exhibited the highest level of ambiguity of all five dimensions. This would explain the consistent use of this concept across all levels of knowing.

In contrast to friendship, the dimension of "acquaintance" has a negative association with knowing level. Although it provides little concrete information about the relation, other than a suggestion of little knowing, it is more informative than the dimension of friendship.

Frequency of contact is a concept which applies across all knowing levels *except the highest*. As might be expected, the higher the knowing level, the higher the percentage of respondents who used this dimension. This holds until level 5, where only six percent of the respondents used it. These data suggest that, for these respondents, defining knowing to be people whom you see the most could exclude alters whom the respondent *knows* the most.

Table 2. Significant correlations (Pearson R) of categories.

Co-occurrence of ...	With	Correlation	Prob > R
Friendship	Closeness	0.50	0.01
Friendship	Family/Relative	0.48	0.01
Family/Relative	Closeness	0.40	0.01
Friendship	Acquaintance	0.34	0.02
Know Through Someone	Frequency of Contact	-0.32	0.03
Know Personal Data About Alter	Know Factual Data About Alter	0.31	0.04

An explanation for the fact that level 5 does not require frequency of contact emerges from examination of the family category. It tends to be associated with a high knowing level used by over half the respondents. Many people considered 5 to be reserved for family and close relationships, making frequency of contact less important in the evaluation of knowing strength. This may not be limited to family, however. Frequency of contact may be unimportant for most level 5 alters, regardless of the character of the network tie.

Another category of interest, "knowing personal data about the alter", also increased with knowing level. For some respondents, "the more you know about" an alter, or conversely "the more they know about you", the higher the level of knowing. Acquaintances were frequently characterized as those about whom respondents knew little (particularly personal information). Some respondents specifically mentioned knowing factual data about an alter, such as how many children alters have or where alters lived.

Although the dimension of "closeness" was mentioned by half of the respondents, analysis showed that respondents used the idea of closeness synonymously with knowing (suggestive of Burt's concept of the substitutability of content). When asked to rank on a scale of 1 to 5 how close they were to an alter, over 90 percent of the 2,820 rankings were within 1 point of the knowing rating. Further, there were no cases where knowing was high and closeness low, or vice versa.

Table 2 presents those dimensions that go together. Friendship as a criterion of knowing is mentioned along with closeness, family and acquaintance. None of these present

any surprises, with the exception of a relatively weak negative association between "frequency of contact" and "knowing through someone". I call these ties "vias." When respondents mentioned knowing someone as a via, they tended not to mention frequency of contact as a dimension.

A principal components factor analysis on the frequencies of these dimensions yielded two factors that explained 37% of the variance in the 11 variables tested. The first factor loads the dimensions of family, closeness and friendship high, and the two knowing-data dimensions low. Rotating the factors either orthogonally or obliquely causes the lower loadings, which were not demonstrably strong in the original solution, to vanish. This leaves the dimensions of family, closeness and friendship defining the first factor, which tends to be associated with high levels of knowing.

The second factor loads the via dimension against frequency of contact and duration of tie. This is sensible since the via relation is a consequence of another person. Thus, frequency of contact and the duration of the via tie also depend on the intermediary alter. The remaining factors accounted for little variance and loaded low.

Study 2: Method

In the next study, I adapted the free list method to a telephone survey in which respondents were selected randomly from all Florida households that have a telephone. Interviewers read a randomized list of male first names to respondents. When a respondent knew a person who had one of the first names, he or she told the interviewer to stop. Respondents were then asked to say, on a scale of 1 to 3, *how* and *how well* they knew the choice. Interviewers then read a list of female first names following the same procedure. Interviewers alternated male and female lists until eight alters, four males and four females, had been selected.

My assumption here was that first names are more randomly distributed in a person's network than are names in a respondent's free list. Excluding names associated with particular ethnic groups biases against the inclusion of family members for respondents who belong to these ethnic groups. However, people named John are no more likely to be co-workers than people named Edward. My assumption, then, was that the eight alters approximate a random selection of eight people from a respondent's network.

This method of alter selection, while arguably more random than other methods, is not perfect. There is a strong gender bias based on the fact that there is more variety to female names than to male names. Second, care must be taken to ensure that certain ethnic groups are represented, particularly Blacks and Hispanics. Finally, since it is more efficient to use popular names, the potential to use a name which applies to more than one alter is high. In such a case I assume that the respondent will use the first to come to mind, or the alter who is closest to them. Although this presents a potential bias towards closer alters, analysis of data generated by this method suggests there is very little "order effect" between alters which is more common with other methods (Brewer, 1995).

As in the experiment using 60 alters, the 233 respondents were asked to describe how they assigned knowing levels 1 to 3 after they had done so for the eight alters. Again, in the same study, the data were coded according to the presence or absence of certain dimensions.

Study 2: Results

Telephone survey results are presented in Table 3. The big difference between Table 1 and Table 3 is the presence of "situation specific" and "emotional aspect" in the way respondents described their use of the three levels. Over a fourth (28%) of the respondents used a situation (such as "going to lunch" or "borrowing money"), and a fifth (22%) used what I categorized as emotional concepts (such as "casual relations" or "presence of feeling" or "likable"), to characterize relations.

In general the distribution of the dimensions across knowing levels in Table 3 resembles the distribution in Table 1. Frequency of contact is used across all levels and falls off in the highest knowing category. Family is generally a high knowing-level category. Closeness, however, is mentioned in all levels. For low knowing levels, closeness was mentioned in the negative; i.e., a 1 is used for people to whom respondents are not close. Acquaintance is consistently a low knowing-level dimension, while knowing data about alters increases with knowing level.

Summary of Studies 1 and 2

It is apparent that respondents have several ways in which they interpret knowing, levels of the three most dominant being frequency of contact, knowledge of personal data, and whether or not the alter is family. Remember that these dimensions arose from an already constrained definition of knowing—a definition far more limited than is typically used in network generators. Thus, knowing itself is multiplex. This means that respondents may interpret knowing differently from one another. And this introduces the likelihood of variability in the results due to the application of the construct, rather than to variables that researchers are investigating. How severe are the potential errors? To answer this question, a third study was done on a much larger sample of respondents.

Table 3. Pct. of respondents who mentioned category, by three levels and over all levels.

Dimension	Percent who used dimension			
	Overall	Level 1	Level 2	Level 3
Frequency of Contact	38	14	29	16
Friendship	29	2	11	22
Closeness	28	10	8	9
Situation Specific	28	13	16	7
Family/Relative	24	4	5	16
Emotional Aspect	22	19	9	5
Acquaintance	21	19	3	0
Know Data About Alter	20	0	2	23

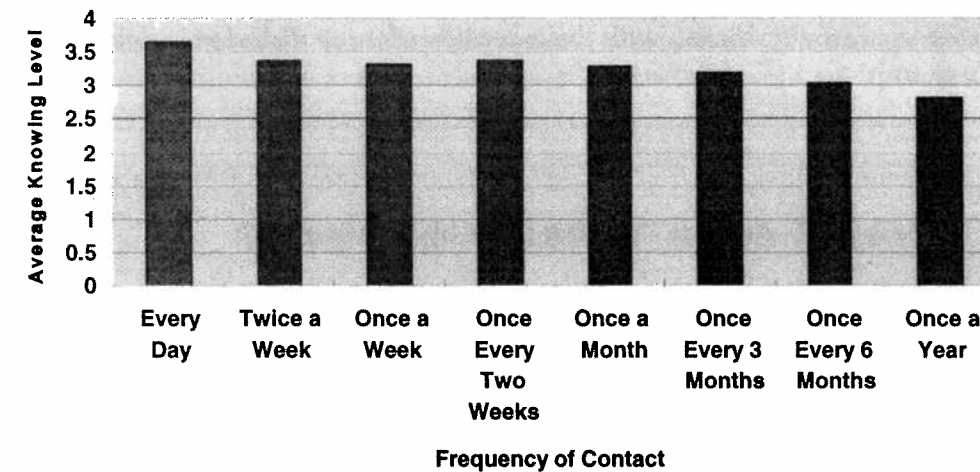
Study 3: Method

A list of fifty first names was selected from the 1993 University of Florida registrar's records. Twenty five uniquely male and twenty five uniquely female names were picked and an attempt was made to use names that are common among both black and white students and that do not demonstrate a blatant age bias. Despite all precautions, only 37% of the 136 Black respondents were able to connect with 14 alters from the list of 50 first names, compared to 52% of the 1,313 White respondents. The final list was cross-checked with similar lists generated by Pluckett (1975).

Unlike Study 2, there was one list that alternated male and female names. This made it possible for a respondent to choose alters disproportionately by gender, although there was probably a bias against female alters⁴. On balance, I believe this list to be less biased than most network generators in eliciting a random grab of alters from an ego-centered network.

⁴As I and others have noted, there is more variety to female names than male names. From the registrar's list, 42% of all males are accounted for by the 21 most frequently occurring male names compared to 25% for the 21 most frequently occurring female names. Thus, a list with equal numbers of both is probably biased against selecting female alters in the proportion they actually exist in the network. The proportions such a list should have would vary by respondent and are unknown.

Figure 1. Average Knowing Level by Frequency of Contact.



Interviewers read the list of fifty names stopping when the respondent recognized a name. At this point a series of questions were asked about the alter and the respondent's relationship to the alter. A total of 14 alters were selected, and 747 respondents were able to make it through the list and generate all 14 alters. These data were summarized to provide characteristics of each network, such as the proportion of a network that were family members, or the average level of knowing.

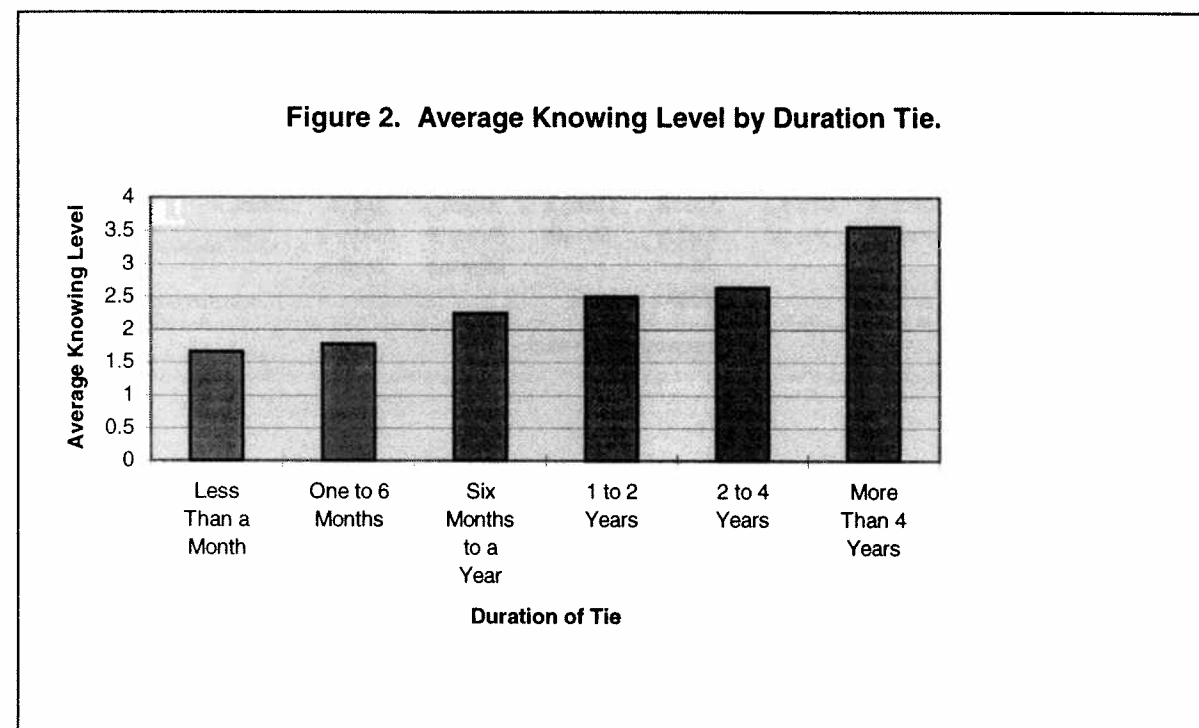
Study 3: Results

Studies 1 and 2 defined the dimensions that informants used when assigning a five-point knowing level to an alter. From the distribution of these dimensions across knowing levels it appears that, as knowing level increases, frequency of contact, duration of tie, the amount of information known about an alter and whether or not the alter is a family member become increasingly important.

However, while these studies demonstrate the multiplexity of knowing as a tie, they do not tell us about the direction of the relation between dimensions and knowing level. We assume that high knowing levels will be associated with frequent contact, lengthy relationships, high proportions of family alters and a high level of information known about the alter. It is this assumption, and the potential of cases that run counter to them, that make multiplexity important. After all, if these dimensions vary directly with level of knowing, then that level is a proxy for all of the dimensions. Studies that use this single concept to represent a network tie gain validity. Study 3 provides the opportunity to test whether these trends exist and whether

anomalous cases are common enough to warrant caution in using knowing by itself to define a tie.

Turning first to frequency of contact, Figure 1 shows a clear tendency for average knowing level to decrease as frequency of contact decreases. The mean differences of knowing level between categories are significant, with the exception of those included between twice a week and once a month.



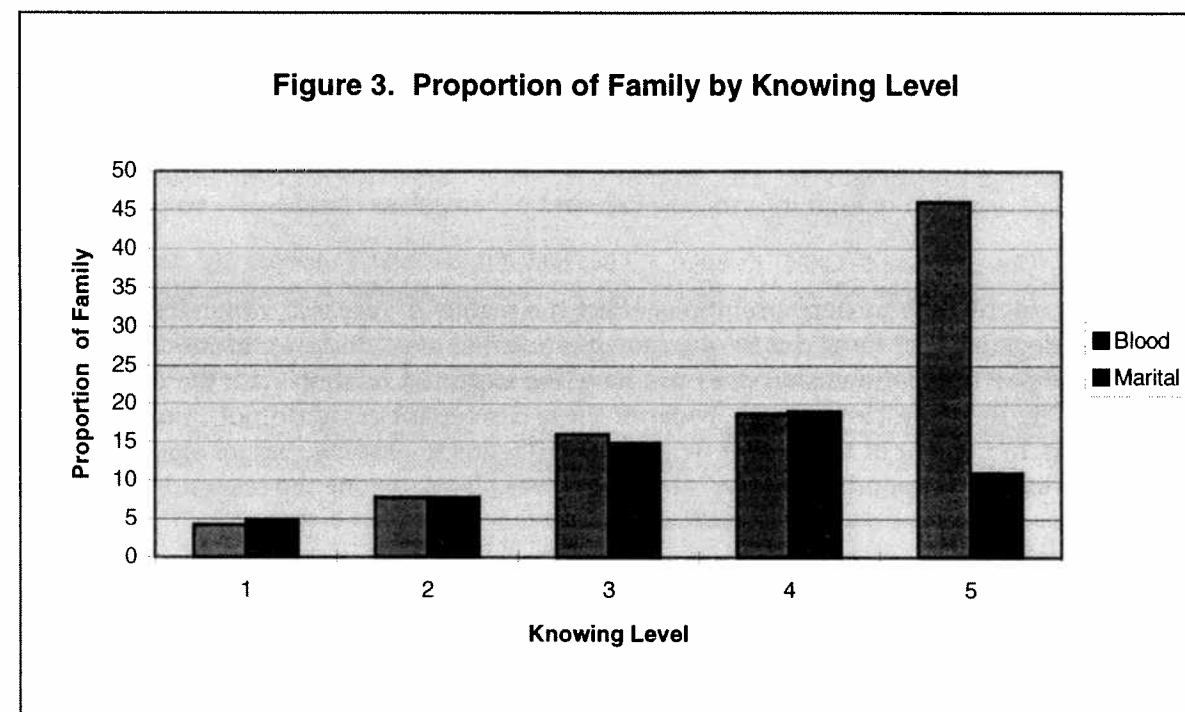
Cases running counter to this trend would be high knowing and low frequency, or low knowing and high frequency. On average, four percent of respondents' alters are those whom they see no more than every six months, but know at level five. Another four percent on average are those whom respondents see at least twice a week but know at level one. So, a total of eight percent of the alters run counter to the assumed relationship between knowing and frequency of contact.

Figure 2 also shows the expected relation between duration of tie and knowing level; as the duration of the tie increases, so does the average knowing level. In contrast to frequency of contact, duration exhibits only one type of anomalous case. On average, nine percent of respondents' alters were those whom they knew for at least two years, but to whom they assigned a knowing level of one. There were virtually no cases of informants assigning an alter a knowing level five when they had known them for less than three months.

The amount of information known about an alter is correlated strongly with knowing level (Pearson $r=.92$). (It remains unclear whether this is because information known and knowing level are actually the same, or if this is an experiment effect due to the uniqueness of

these two variables having a number assigned to them with no definition of the categories, that is, they are both constructs.)

Still, an average of 16 percent of the alters were knowing level one, but were assigned an information level of five. In contrast to the dimension of closeness, many alters are those whom respondents don't know well, but about whom they claim to know a lot about. The opposite case, claiming to know someone well (knowing level five) but knowing little about them (information level one), is very rare.



The final dimension is that of family. In Study 3 the distinction was made between blood relations and marital relations. Figure 3 presents the proportions of family of each type that account for each of the five knowing levels. Thus, 46 percent of knowing level five assignments were blood relations, while 11 percent were marital relations. This figure shows that as knowing level increases, the proportion of family ties of both types increase. Interestingly, they are virtually identical for the first four levels, while blood relations are four times more prevalent in level five knowing assignments than are marital relations. The potential anomalous cases of low-knowing blood or marital relations combined represent about 1.5 percent of alters on average, or less than one percent each.

Discussion

From these three studies we see that the word "knowing" is understood by informants in different ways. We cannot assume that asking informants to assign tie strength based on this single word will assign values equally along all the dimensions informants think about when applying it to their alters.

The dimensions that appear to be important in making these assignments are friendship, closeness, frequency of contact, duration of tie, how much is known about an alter, whether the alter is family, and acquaintanceship. Friendship and acquaintanceship are not informative concepts as they tell us little about the nature of a relation. Closeness is by all accounts the same concept as knowing; there are virtually no cases of high knowing and low closeness or vice versa. Of the remaining four dimensions of knowing, all exhibit an overall trend with relation to knowing that is predictable. Information known, duration of tie, frequency of contact and proportions of family all increase with the level of knowing.

However, several cases run counter to these trends. These are high knowing/low frequency and low knowing/high frequency alters (4 percent of alters each, on average), low knowing/high duration (9 percent) and low knowing/high information known (16 percent). Consequently, those studies that measure ties and tie strength using the single word "knowing" may misinterpret the composition of the tie. Worse, assuming that defining a strong tie as high frequency, high duration or high information known by themselves could easily result in a low knowing tie.

How might such misinterpretations affect the results of research which uses a single word network generator? Consider the percentages listed above which represent cases where the level of a particular dimension does not have the expected relation with the level of the single word tie measure "knowing." Most of these discrepant cases do not pose a serious problem. Yet 16 percent of the time it would be erroneous to assume that an alter who was selected because the respondent "knew" them well was also someone the respondent knew a lot about.

One area of research that this might significantly effect is the use of information known by respondents about alters to estimate hard-to-count populations (see Killworth et al., 1995; Laumann et al., 1993). In these cases respondents are asked to list alters they "know" who belong to various subpopulations, such as diabetics, or victims of AIDS. The results of this study suggest that the ability of the respondent to know whether an alter is a member of any one subpopulation may be seriously compromised as much as 16 percent of the time.

These results lend support to the conclusions reached by Burt in 1983. Whereas Burt's data were based upon a limited set of five alters, these studies extend that to a free list of 60 alters, and a "random" draw of 14 alters from the networks of 747 respondents. Similar to Burt's findings, these relations are clearly multiplex. Further, respondents accept the concept of "knowing" to define their ties and interpret the tie in different ways.

In the end, we are probably safer to measure network ties using several questions with defined categories that individually address the various dimensions of ties. While the focus of this study was the word "knowing", there is no reason to believe other single word tie definitions, such as "closeness", are any better proxies for all of these dimensions. Given that all subsequent results are based on the way ties are measured, a standard set of questions should be developed that network researchers will use to define ties. This will make our results comparable and will remove the effect of different measures of ties and tie strength.

References

- Burt, R. 1983. "Distinguishing Relational Contents" in *Applied Network Analysis* edited by R. Burt and M. Minor. Beverly Hills, CA: Sage Publications.
- _____. 1984. "Network Items and the General Social Survey." *Social Networks* 6:293-339.
- Brewer, D. 1995. "No Associative Biases in the First Name Cued Recall Procedure for Eliciting Personal Networks." Presented at the meetings of the International Network for Social Network Analysis in London, England, July 1995.
- Erickson, B.H. 1981. "Network Sampling in Practice: Some Second Steps." *Social Networks* 3:127-136.
- Fischer, C.S. 1982. "What Do We Mean by 'Friend'? an Inductive Study." *Social Networks* 3:287-306.
- Friedkin, N. 1980. "A Test of the Structural Features of Granovetter's Strength of Weak Ties Theory." *Social Networks* 2:411-422.
- Killworth, P., C. McCarty, E.C. Johnsen, G.A. Shelley, H.R. Bernard. 1995. "A Social Network Approach to Estimating Seroprevalence in the United States." Paper under review.
- Laumann, E.O., J.H. Gagnon, S. Michaels, R.T. Michael, L.P. Schumm. 1993. "Monitoring AIDS and Other Rare Population Events: A Network Approach." *Journal of Health and Social Behavior* 34:7-22.
- McCallister, L. and C.S. Fischer. 1978 "A Procedure for Surveying Social Networks." *Sociological Methods and Research* 7: 131-148.
- Mitchell, J.C. 1969. "The Concept and Use of Social Networks" in *Social Networks in Urban Situations* edited by J.C. Mitchell. Manchester, UK: Manchester University Press.
- _____. 1987. "The Components of Strong Ties Among Homeless Women." *Social Networks* 9:37-47.
- Puckett, N.N. 1975. *Black Names in America: Origins and Usage*. Boston, G.K. Hall.
- Wellman, B. 1979. "The Community Question: The Intimate Networks of East Yorkers." *American Journal of Sociology* 84:1201-1231.

Interorganizational Networks and the Changing Employment Contract¹

Arne L. Kalleberg
University of North Carolina

David Knoke
University of Minnesota

Peter V. Marsden
Harvard University

Many companies are dismantling their internalized system of mutual obligations between employees and the firm, relying more on external labor markets to provide labor power in the form of contingent workers and training services. Our primary focus is on changes in the ego-centered networks of relations connecting employers to those organizations from which they recruit and train employees. To understand the durability of these relations and how networking processes change as a means of obtaining human resources, we present hypotheses about the conditions affecting the form and content of a focal organization's occupation-specific interorganizational relations, including the effects of environmental instability, tight labor markets, unionization, and institutional constraints. We will conduct a 1996-98 national panel survey of U.S. establishments to track these change.

Introduction

A remarkable restructuring is under way in the American employment contract that emerged in the post-World War II era of rising productivity and U.S. economic dominance. That traditional system sought to reduce the costs and uncertainties implicit in casual, short-term, open-market labor relations by erecting internalized systems of mutual obligations between employees and their firms. To secure long-term supplies of skilled workers, the larger corporations offered job security, complex pay schedules, extensive internal labor markets, promotion opportunities, and elaborate training programs (Osterman 1984; Knoke 1996). Institutional forces propagated the traditional employment contract. Labor unions and governmental regulators pressured companies to adopt standardized employment practices (Baron et al. 1986; Kochan et al. 1986). Business associations, professional societies, and academic consultants touted "best practice" personnel systems, often modeled after the Japanese lifetime company employment contract (Wyatt Company 1993).

¹This paper was presented at the International Social Network Conference, London on July 6-10, 1995, and at the European/American workshop sponsored by the Netherlands Institute for Advanced Study in Wassenaar, The Netherlands on July 15-16, 1995. It is a modified version of a grant proposal that has been funded by the National Science Foundation's Human Capital initiative and the Sociology Program. Correspondence regarding this paper should be addressed to Prof. David Knoke, Department of Sociology, University of Minnesota, Minneapolis, MN 55455. Email: Knoke001@maroon.tc.umn.edu

By the early 1990s, the traditional employment contract faced serious challenges. Blue-chip companies such as IBM, General Motors, and Kodak were downsizing or abandoning key elements of their elaborate human resource systems. Many conglomerate firms move toward undiversified structures (Davis et al. 1994). The rapid integration of the U.S. into the world economy generated intense financial pressures to re-engineer corporations into lean-and-mean competitors (Harrison 1994; Lawler 1992; Useem 1993). The drive for more efficient production prompted the wholesale adoption of new management techniques, encapsulated as a total quality movement and a return to core competencies (Lawler et al. 1992). The emergence of a new employment contract as an alternative to traditional internal labor markets involves a more casual relationship between employers and employees, in which external labor markets assume much greater importance." Employees are being pushed into taking more of the risks involved in doing business, job requirements are significantly more demanding, and employees must develop their own skills and careers" (Cappelli 1996). Campaigns to decentralize the organization often freeze hiring, cut salaries and benefits, terminate career trajectories, increase workloads, heighten stress, and undermine morale. White collar employees, especially middle managers, have been hit as severely as blue collar workers.

As internal labor markets are disassembled, corporations are expanding their use of "contingent" workers—part-time or temporary employees and subcontracted workers employed by suppliers and help agencies (Osterman 1994). By 1994 Manpower, Inc., had supplanted the shrinking General Motors as the largest U.S. employer. The use of contingent workers is not limited to clerical employees, but embraces such high-skill occupations as engineering, computer programming, and drafting. In part, the rise of a contingent workforce reflects the corporate drive to lower costs. But, companies also turn to outside labor suppliers and subcontractors whenever their high performance work systems require specialized skills that are not readily available within the firm's pared-back core workforce. Other firms engage a contingent workforce to gain production flexibilities and to avoid the stringencies imposed by union contracts. The resulting employment relationship comprises a two-tier structure: a reduced core of employees who enjoy good job security and an expanded peripheral workforce that lacks pensions and health benefits.

We are conducting a research project to monitor these continuing changes in the employment contract, applying an interorganizational network perspective to explain two basic human resources practices: how employers interact with other organizations to obtain and train new workers. In effect, we ask how tightly workers are linked into their firms, how much firms invest in their internal workers, and how they make those investments. Understanding the conditions under which employers turn to outside organizations for assistance with these labor functions is the central focus of our research.

Theoretical Background

Our project is grounded in a network perspective on organizations, labor contracting, and job training. This section reviews the theoretical and empirical literatures relevant to formulating our research design and specifying testable hypotheses.

Interorganizational Networks

Both conventional economic and sociological theories of organizational behavior tend to overlook the importance of interorganizational networks for understanding firm labor contracting and job training practices. Economic theories of the firm are grounded in a formal microeconomic price theory that analyzes the economic incentives facing the single firm to explain its formal organizational structure, strategy, and performance (e.g., Carlton and Perloff 1994). The structuralism paradigm in sociology (e.g., Berg 1981; Farkas and England 1988) emphasizes how worker and firm outcomes vary with the enterprise's technological, administrative, and political arrangements. In their narrow focus on such structural features as formal job classification systems and internal labor markets, sociological explanations deflected research inquiry away from the role of interorganizational connections in shaping a firm's decisions. But, recent theoretical and empirical developments have begun turning some attention toward those issues (Granovetter 1988; Nohria and Eccles 1992).

Increasingly the hiring and allocation of labor, which comprise the largest cost component for most organizations, are neither wholly external to the organization (in which case only market relations would be relevant), nor entirely confined within isolated physical and organizational locations (in which case only a consideration of hierarchical relations would be required). Rather, the on-going transformation of the U.S. employment contract is generating new forms of labor exchange between organizations, whose significance may be better explained by interorganizational concepts and principles than by the atomistic actor approaches of conventional economic and sociological theories of the firm. A network perspective on organizational behavior, developed primarily by sociologists and organization researchers, demonstrates that the patterns of relationships among actors are indispensable for understanding a wide range of organizational phenomena (for overviews of the interorganizational network literature, see Baker 1992; Burt 1992; Granovetter 1985; Knoke and Guilarte 1995; Knoke and Kaufman 1990; Powell 1987, 1990). These applications of network ideas span such diverse organizational activities as: human capital formation (Marsden and Hurlbert 1988); mentoring (Noe 1988); women and minority employees (Ibarra 1993); managerial careers (Burt 1992); small business entrepreneurs (Aldrich 1989); technological innovation and transfer (Harianto and Pennings 1990); corporate alliances (Gerlach 1992); joint venturing (Barley et al. 1992); multinational corporate linkages (Ghoshal and Bartlett 1990); and governmental lobbying (Knoke et al. 1996). However, network researchers have been strikingly inattentive to interorganizational processes in both labor contracting and job training. While this lacuna means that we have no prior empirical foundation on which we can build, it also offers us a unique opportunity to make substantial contributions to these issues. Network ideas should prove most useful for tracking the evolving U.S. employment system as it produces complex structures of employer-employee relations that are simultaneously internal and external to the firm.

In the absence of being able to draw on the insights of a rich empirical literature on interorganizational networks, particularly as applied to company labor contracting and job training practices, we instead sketch the basic analytic concepts and network principles that should prove most relevant to our proposed substantive research. A *social network* comprises a set of actors and their dyadic relations. A *relation or tie* consists of an exchange of commodities or services between two *actors*, or work organizations in our case. The distribution of exchange ties varies conceptually along several key dimensions, which we intend to operationalize in our

project: (1) *intensity or frequency*, the number of transactions occurring per unit of time; (2) *duration*, the span of time across which exchanges occur; (3) *formalization*, the extent to which a transaction is regulated by explicit rules and sanctions governing their occurrence; (4) *range*, the volume (number) and diversity (quality) of actors with whom exchanges occur; and (5) *multiplexity or overlap*, the presence of more than one type of exchange between a given dyad. The two substantive relations of interest for our project are the labor hiring and labor training ties between dyads, or pairs, of organizations.

Interorganizational networks may be viewed either from the perspective of a single actor embedded in a larger system (an ego-centered network) or from the full-system viewpoint (a global network). The latter perspective proves meaningful only where the analyst can bound a closed and relatively small organizational population whose members maintain dense ties to one another. When seeking to develop a representative portrait of the networks operative in a large and open population, as we do here, the ego-centered approach is more appropriate (for a good exemplar, see Kelley 1993). An *ego-centered network* consists of an *ego (or focal) organization* with its direct ties with a set of *alter organizations*. The labor contracting and training exchanges between a work organization and its providers are unlikely to be affected by ties among these alter organizations (since the competitors do not generally exchange labor or training among themselves) nor by these vendors' ties to still other organizations that lack direct ties to ego. Hence, we propose to investigate the "first-zone ego net," comprised only of direct ties between an employer and those organizations from which it obtains new employees and job training services.

Employment Contracts

We use the interchangeable concepts "employment contract" and "labor contract" to encompass a broad range of employer-employee regimes, which may or may not be formalized as written contracts. These are bilateral arrangements involving reciprocal expectations and behaviors between management and labor. A labor contract represents what each party seeks to obtain from the employment relation by trading something of value to the other: employers exchange money, security, and other job rewards with employees in return for their efforts and sometimes their loyalties. Employment contracts often specify in considerable detail how work is to be organized, governed, evaluated, and rewarded (see Kalleberg and Reve 1993, pp. 1105-6; see also Rousseau 1989; Rousseau and Parks 1992).

Employment contracts vary along several key dimensions, including: the duration of the employment relation; whether workers are employees of the organization or independent contractors; whether employers directly provide job training or rely on outside organizational vendors of training; the extent to which contract terms are formalized and explicit as opposed to informal and implicit; whether employers or employees hold the balance of power in defining contract terms; the extent and nature of compensation; the extent to which the contract is subject to regulation by government agencies or unions. These dimensions of contracts may be interrelated. For example, decisions regarding compensation, duration of contracts, and the provision of training are intimately related to such issues as the balance of power and regulation. Our proposed research will focus mainly on duration, formal contracting, and job training because these relations have been especially vulnerable to the kinds of changes described above.

As noted in our overview of the shift from long- to short-term employment contracts during the past fifteen years, many U.S. work organizations have sought to move away from the traditional model where most employees (especially males) were connected to their employees on a full-time, relatively permanent basis. This "old covenant," characterized by an exchange of job security for performance and loyalty, is being supplanted by a "new covenant" in which employers promise to train workers and help them to become "employable" in a variety of companies (Waterman *et al.* 1994), but make no guarantees of continued employment (O'Reilly 1994). To ensure steady supplies of qualified workers who are weakly attached to the organization, employers rely increasingly on temporary help agencies (Parker 1994). The duration of employers' relations with temp agencies varies considerably. On one end of the continuum, a focal organization buys the labor it needs at an auction on the open or "spot" market. Here, the hiring relationship has an extremely short duration. On the other end of the continuum, a focal organization keeps a temporary agency on retainer, thereby obtaining a reliable flow of workers as needed. This long-term relation enables the employer and the temp agency jointly to develop a projected plan for how many employees are needed at various times. Thus, close ties help employers to smooth out fluctuations in business cycles, since workers are added only when needed and subtracted as business falls off.

A second change in the contemporary employment contract is greater reliance by firms on individual and organizational contractors, as opposed to their own employees, in order to get work done. With an increased emphasis on core competencies now part of the business environment of the 1990s, employers increasingly find it more cost-effective to hire outside people and organizations to perform certain routine, peripheral, and/or irregular sorts of work for them. Extant data do not permit reliable estimates of how many workers in the U.S. labor force are involved in various types of subcontracting relationships, though anecdotal evidence suggests that these kinds of network linkages are becoming more common. For example, a study of 442 firms by the Bureau of National Affairs found that 13% increased their use of temporary workers and outside contractors for administrative/business support contracts and production subcontracting (Abraham 1988). Employment in the business service sector, a primary locus of subcontracting relations, rose from 3.3 to 6.18 million workers from 1980 to 1991, an 87% increase (Parker 1994, p. 7). The 1991 National Organizations Survey (NOS; see Kalleberg *et al.* 1996) estimated that 19% of establishments frequently recruited some of their core workers through employment agencies, a lower percentage than those employers who used newspaper advertising and employee referrals, but more than reliance on business and professional contacts (Marsden 1994).

Job Training

National surveys of employees and organizations concur that larger workplaces, which maintain elaborate internal labor markets, sustain much broader formal job training efforts, both inside and outside the organization (Osterman 1995; Knoke and Kalleberg 1994; Knoke and Ishio 1994; Lynch 1994; Frazis, Herz and Horrigan 1995; Knoke 1996). Evidence from the 1991 NOS revealed widespread formal employee training programs, involving establishments employing 72% of the U.S. labor force (Knoke 1996). Company training activities are more likely to remain in-house whenever they involve firm-specific expertise, proprietary knowledge, and adequate time to create their own training staffs. A decision to purchase training services from external training vendors is more likely when firms have important needs that cannot be met within the time, staffing, and money available to produce proprietary programs. A variety

of outside providers—encompassing commercial training consultants, collaborative-customer firms, and nonprofits such as local community colleges, voc-tech schools, and community-based (low-income) organizations—offer both highly specialized and generic training packages on as-needed bases (Carnevale *et al.* 1990, pp. 101-141). External vendors also include the larger organization ("parent") of which an establishment is a branch or subsidiary unit and labor unions that conduct collaborative training programs with the firm (Ferman *et al.* 1991).

The 1991 NOS uncovered substantial reliance by establishments on external training providers (Knoke 1996). The relations were operationalized by two general items: (1) "Was any of this training conducted by staff from the (LARGER ORG), either on (ORG's) premises or by sending employees to (LARGER ORG)?"; (2) "Was any formal job training conducted on (ORG's) premises by outside agencies, consultants, or schools?" Even establishments that maintained their own in-house training staffs almost always collaborated with external vendors. Fewer than 3% of establishments relied solely on their own training staffs, while another 5% combined their training staffs with trainers from the parent organization. Nearly one-quarter of establishments had no training staffs of their own, but depended entirely on the larger organization's trainers; another third conducted joint training programs with their own staffs and those of an external vendor; and another third combined all three sources. A substantial size gradient was evident: more than 75% of the smallest establishments (under 5 employees), which generally lacked in-house staffs, purchased training exclusively from the two external sources; but more than 90% of the largest organizations (over 1,000 employees) always combined their own training staffs with those from parental and/or other external vendors.

We propose to conduct a more in-depth examination of interorganizational training arrangements than was feasible with the omnibus 1991 NOS. In place of its two general indicators of collaborative training, we will distinguish both the specific forms and the substantive contents of the training that a focal employer's purchases from particular training vendors for its various occupational categories. For example, we must separate multiplex relations (where one training vendor provides the training for all the occupations of a focal organization) from single-stranded or uniplex ties (where each occupational training program is provided by a different vendor).

Another conceptual distinction is how job training practices vary along such dimensions as internalization and formalization. To illustrate the range of increasingly formal interorganizational training ties, consider the following:

- ▶ The employer mandates that employees in an occupational category need training, but offers no resources for its provision. These employees must make their own arrangements to locate and pay for training by outside vendors.
- ▶ Employer underwrites training expenses for employees, for example, by reimbursing tuition for training courses. But, employees must still make their own arrangements with external training vendors.
- ▶ Employer directly negotiates a formal contractual agreement with an external vendor to train employees at off-site locations apart from work periods.

- ▶ Employer arranges for an external training vendor to provide on-site training during employees' work hours.
- ▶ Employer's training staff collaborates with an external vendor to conduct a jointly administered, on-site training program during work hours.
- ▶ Employer's training staff takes over the entire training effort from an external vendor, for example, by buying a training school.

Significance of Changing Employment Contracts

Employers' decisions about the form and duration of employment contracting, on the one hand, and whether they should rely on internal as opposed to external sources of training, on the other, are intimately related. For example, organizations that contract out more services and functions are also more likely to rely on external agents to provide contingent workers with the training necessary to accomplish these tasks. Moreover, a rational organization will not find it cost effective to use many of its own resources to train contingent workers because the firm cannot expect to recover its full investment through increased productivity.

A company's decision to change its employment contract is primarily motivated by the desire to decrease unit labor costs. These costs—representing the ratio of payroll costs to productivity—can be reduced in two ways: by lowering payroll costs and by increasing productivity. The first strategy—reducing payroll costs—is sometimes referred to as the "low cost route" to efficiency, because it reduces the quantity of work supplied (see Appelbaum and Batt 1994). This route is often cited as the motivation for externalizing labor by using contingent and/or contracted workers. The alternative road to enhancing performance—increasing productivity and the quality of work—relies heavily on giving employees and contractors considerable job training. While these two cost-cutting strategies may be manipulated independently, they may have related consequences: for example, reducing payroll by downsizing or scare tactics may also reduce worker productivity. Therefore, we must examine these dimensions of labor contracts simultaneously in our proposed research.

The changing employment contract is having a profound impact on individual workers' lives, on work organizations, and on the nation. The growth of contingent workers and contracting has considerably reduced individual opportunities for career advancement within organizations. Firm internal labor markets—which formed the job ladders up which ambitious employees once climbed—are rapidly being dismantled and replaced by short-term, hazardous career lines where workers must take greater responsibility for their acquisition of new skills (see Waterman *et al.* 1994). Because workers can no longer expect to spend much of their lives working for one organization, they must be prepared to deal with the disruptions caused by moving from one place to another. They must plan for continual retraining throughout their work lives, often at their own expense.

The corporate preoccupation with becoming "lean and mean" by expanded use of contingent and contracted workers may also have negative consequences for organizations. There are many advantages for an organization to keeping a well-trained, loyal workforce. For example, temporary workers are often associated with higher supervision costs because temps have little basis for loyalty to a company and may not be sufficiently well-trained to do high quality work.

Firms may discover that contingent workers actually cost more because they are less productive than long-term employees. A longitudinal study such as we are proposing is necessary to track changes in organizational use of contingent workers and to determine whether they add or shed workers at various phases of the business cycle.

The contemporary move toward contingency and contracting can also be viewed as a societal effort to respond to competition in the world economy. If successful, these painful changes allegedly would resuscitate the stagnating U.S. standard of living, repaying workers for their sacrifices. But, there are also dangers associated with this strategy: either the reformation won't succeed and foreign nations will capture our markets, or the gains from reinvigorated system will be pocketed by owners and managers, not by ordinary workers (see Harrison 1994).

Research Hypotheses

Drawing from the analytic perspectives summarized above, this section specifies some testable hypotheses about the sources of variation in work organizations' labor contracts and job training relations with other organizations. Because we expect that employers' strategic choices are driven primarily by external social forces, we do not state any expectations here about how internal organizational structures (e.g., division of labor, workforce composition) might affect interorganizational ties, although we will measure and control such factors when testing the relations hypothesized below. Also, we intend to test each general hypothesis for the various "classes of worker" (occupations) within the organizations. For example, strong interorganizational training might be found among the skilled crafts occupations, but may not emerge for clerical or managerial employees. To save space, we do not restate for every occupational category the four classes of research hypothesis below.

Organizational Environments

Theorists have proposed several analytic dimensions for conceptualizing organizational environments, such as uncertainty and complexity (Aldrich and Marsden 1988), which we will attempt to operationalize for this project. The concept of environmental instability refers to the degree of turnover in external elements. To the extent that an organization encounters rapid changes in production technologies, in the availability of financial and material resources, and in calculable markets for its products and services, the less likely it is to try dealing with these changes by itself. Under such conditions, we expect organizations increasingly to rely on other organizations for hiring and training employees competent to deal effectively with these environmental changes.

- H1:* The more unstable its environments, the more likely an organization is to develop labor contracting and job training relations with other organizations that exhibit greater intensity, duration, formalization, range, and multiplexity.

Labor Markets

When the supply of essential production or service workers available to an employer tightens (i.e., when the occupational unemployment rate decreases), organizations are forced

to dip ever lower into the labor queue to find workers. As the labor pool shrinks ("scraping the bottom of the barrel"), the remaining workers are also less likely to have the requisite skills, experiences, and work commitments that make them valuable to firms. Consequently, companies find themselves investing more effort in searching, screening, socializing, and training new hires, including such basic skills as literacy, numeracy, and punctuality. During such restricted labor market conditions, employers are more likely to turn to such external suppliers as subcontractors, head-hunters, and temp agencies that pre-train temporary hires, as well as to purchase specialized training services from external vendors to bring new hires up to speed and to retrain older employees in new job functions.

H2: The tighter an occupational labor market, the more likely an organization is to form external arrangements for labor contracting and job training.

Labor Unions

Although only one-sixth of the U.S. labor force is unionized today, unions retain significant presences in several key industries, such as construction and manufacturing. Traditionally, unions resisted subcontracting and contingent employment as direct threats to their members' wages, working conditions, and job security. Although the evidence was more equivocal, unions were also believed to oppose programs that involve senior workers in training their own replacements (Mincer 1983). Many unions control apprenticeship programs that are completely independent from the firms where their participants are employed. But, the economic restructurings of the past two decades saw many unions making substantial concessions, such as two-tier wage systems and externalization of parts production, in order to hold onto core union jobs. The recent emergence of several highly visible joint-training programs, where unions and managers collaborate on design and administration, suggests that unions may be replacing adversarial with cooperative stances. These impacts may be most pronounced where rapidly changing technologies and foreign competitors challenge corporate viability.

H3: In unstable environmental conditions, unionized employers are more likely to establish joint job training programs and to engage in external labor contracting practices that preserve core union jobs.

Institutionalization

Firm hiring and training decisions are also shaped by prevailing societal and cultural beliefs about appropriate behaviors, thus conferring greater legitimacy on organizations that adopt conventional forms. A common theme is the importance of such elements as "symbolic systems, cognitive scripts, and normative codes" (Scott 1992, p. 3). Conveyed and sanctioned by peer organizations, regulatory bodies, and governmental authorities, these institutionalized standards compel increasingly uniform organizational practices, resulting in isomorphic structures and homogeneous behaviors among organizations operating within a common field. Scott and Meyer (1991) used institutional ideas to generate hypotheses about the likelihood that organizations will offer formal training programs. They argued that employers tend to copy generally valued models of employee instruction that are only ambiguously linked to firm-specific tasks and purposes, "with loose controls and evaluation systems in ways that are in many respects directly analogous to the operation of the traditional educational system" (1991, p. 322). For example, several major corporations operate company colleges replete with

curricula, examinations, and degrees. In settings where institutionalization is most strongly entrenched, employer adherence to external normative standards is expected to be strongest.

H4: The more extensive the institutional constraints toward particular types of labor contracting and job training practices, the greater an employer's conformity to those norms.

Although the four broad hypotheses above are presented in *ceteris paribus* form, we will test them with multivariate methods that allow controls for other factors, especially internal organizational characteristics, and for specification of interactions or conditional effects. The hypotheses refer not only to comparative differences in labor contracting and job training between organizations at a given time, but also to changes in an organization's interorganizational relations over time as its environmental, labor market, unionization, and institutional conditions change. Because we seek to understand the durability of these relations and how networking processes change as a means of obtaining human resources, we need to test our research hypotheses using the longitudinal data collection design described in the next section.

Research Design

This section outlines the sampling, measurement, and data collection procedures to be used in a longitudinal survey of a diverse national sample of U.S. establishments. We applied several of these methods in the 1991 National Organizations Survey (Kalleberg *et al.* 1996), but will modify and extend certain procedures to suit the unique focus of our current proposal.

A Longitudinal Organizational Survey

We will contract with the Minnesota Center for Survey Research (MCSR), a unit of the University of Minnesota, to conduct a two-wave panel survey of U.S. work establishments in 1996 and 1998. We expect MCSR to complete 1,000 interviews for the 1996 wave. Based on the 1991 NOS field experience, we anticipate a response rate above 70% of sampled organizations (selected as described in the next subsection). We also assume that 800 of the organizations participating in the first wave will complete interviews in the second wave. No replacements of second-wave refusals will be made. Within each establishment, MCSR will attempt to identify and interview the human resources manager or personnel director, since that person is likely to be the most knowledgeable informant about the organization's labor contracting and job training practices. In some organizations, perhaps a fifth of the cases, information will also be sought from training directors. In the majority of cases, data will be collected in computer-assisted telephone interviews lasting up to 45 minutes for the first wave (and 25 minutes for the second-wave interviews). Again based on the 1991 NOS, because some informants assert that they cannot afford the time for a phone interview, MCSR will be prepared to mail printed versions of the CATI instrument to as much as a third of the original sample. MCSR will use standard follow-up procedures for both the telephone and mail portions of the study.

Sampling Organizations

We will use Dun and Bradstreet (D & B) Information Services to select the sample of establishments to be interviewed by MCSR (Osterman [1994, 1995] also conducted a survey using D & B files). D & B will draw a random sample of establishments stratified by employee size. Stratifying by size is essential because the overwhelming majority of work organizations in the U.S. is small (more than 80% have fewer than 20 employees) and thus are relatively undifferentiated with regard to many important aspects of the employment contract. To ensure that the sample contains many mid-sized and large organizations (which are more likely to train employees internally and to have diverse employment relations), D & B will sample organizations with probability proportional to size. (This design parallels the 1991 NOS multiplicity sample, which used the General Social Survey respondents to identify employers, thus assuring that the NOS establishments were drawn proportional to employee size; see Spaeth and O'Rourke 1994.) The resulting sample should be reasonably representative of U.S. profit-making work organizations, since D & B's file contains nearly 15 million companies (see Kalleberg *et al.* 1990 for a discussion of the advantages and limitations of this sampling frame). D & B will also provide us with a sample of non-profit work organizations, though their coverage of these kinds of organizations is not as exhaustive as the former.

For each organization sampled, Dun and Bradstreet's "Market Identifiers Plus" service will provide us several important pieces of information, including: company name, address and telephone number; up to four executive contacts (including the CEO); information on industry affiliation and parent company; banking and accounting firm relationships (a potentially valuable source of network information); size (in terms of number of employees as well as sales volume); year started; business trends for the past three years. In addition, historical information on the sampled organizations is available from the Dun's Historical Files. This historical information may prove useful for explaining present interorganizational training and other labor contract relations.

Sampling Occupations Within Organizations

The employees of the larger establishments comprise too many occupations for us to collect detailed information on all their labor contracts and job training. Hence, we will develop techniques to identify and sample a subset of *referent occupations* within each organization about which we will query the informants. We will conduct extensive pre-tests to develop effective "occupational name-generator" procedures suitable for both telephone interviews and mail questionnaires. One approach would be to uncover the main network among occupations inside the organization. First, we would ask each informant to identify a single "core occupation" that is crucial to the main product of service of the establishment. We would then solicit a list of occupations that are functionally related (interdependent on) that core occupation, along with judgments about how tightly or loosely connected each one is to the core occupation. Descriptive information would be collected about each occupation, such as the numbers of employees, their composition in terms of genders, races, ages, and other pertinent attributes.

An alternative approach to selecting the referent occupations would start with an informant providing three job titles whose work is "most directly involved" (e.g., central, essential) to the establishment's main product/service. Next, an equal number of jobs less directly involved (e.g., secondary, peripheral) would be identified, regardless of whether they are functionally

integrated with the central occupations. We may decide also to ask about administrative/clerical occupations and "boundary spanning" positions, for example, jobs involving distribution in manufacturing organizations or sales in service enterprises. Regardless of which design we ultimately choose, our main objective is to select as referent occupations both core jobs (whose incumbents are very likely to have strong, long-term employment contracts involving extensive training) and secondary positions (very likely to exhibit the opposite configurations). We anticipate collecting detailed information about the contracts and training for up to six referent occupations in the larger establishments, perhaps focusing the informants' attention on recently hired workers about whom they should possess the most accurate information.

Generating Interorganizational Ego-Networks

For each of the referent occupations selected, we will collect information on the focal organization's ties to other organizations for labor contracting and job training services to these occupations. Thus, for each of the six occupations sampled within a large establishment, we will repeat a series of items about the organizations with which the focal establishment deals for labor contracts and for job training. We will ask informants to enumerate every alter-organization by name and to provide details about those alters' occupation-specific interactions with the focal organization. In particular, for each relationship we will operationalize such basic network properties as intensity (the frequency of contact; numbers of employees participating; funding amounts), duration (the period of time spanned by the relation), multiplexity (use of the same provider for several occupations), and formalization (existence of written contracts). In addition to the network measures, informants will also provide brief profiles of the alter organizations (e.g., their sizes, industries, public-private auspices). Thus, we will be able to construct a set occupation-specific, ego-centered interorganizational networks without the expense of contacting and querying every alter organization in the set. The following two subsections present more detail about measures specific to our substantive research foci.

Labor Contracting Relations

As noted above, we conceptualize the labor contract broadly to embrace more than formal written agreements. We will operationalize six central dimensions of the employment contract. Because these aspects likely vary from one occupation to another, we will use these items to collect network information on every referent occupation. The six dimensions of labor contracts, and illustrative questions, are:

(1) The focal organization's use of contingent workers. What is the percent part-time and percent temporary employees in each occupation? During the past two years, which alter organizations provided temporary personnel to the focal organization to do the work associated with each occupation? Did the ego or alter (temporary agency) set the hours and wages for occupational members? Which organization was responsible for evaluating the employees' work performances? Has the focal organization dealt with the alter for a long time, or did it contract with new alters every time a new job opened? What was the intensity and frequency of the ego organization's use of temporaries? Was the use of temporaries identical for each occupation?

(2) The focal organization's use of individual contractors, independent consultants, and other forms of subcontracting. To what extent did the ego organization contract for labor from an alter in which the latter assumes responsibility for managing, supervision, scheduling, and/or filling out forms (for example, as is common in the construction industry)? What were the duration, intensity, and frequency of subcontracting relationships? Were these subcontracting relations the same for each occupation?

(3) Contract formalization. Did the focal organization have written employment contracts with its "permanent" employees, its subcontractors, and/or its contingent workers? Did the extent of contract formalization differ from one referent occupation to another?

(4) Power balance in the employment relationship. Does the employer or employee primarily decide when to terminate the employment relation? Is there a tenure system or other form of job security? Can a person be fired for (what) cause? How often does the organization experience cyclical layoffs?

(5) Compensation and job rewards. What fringe benefits (e.g., pension rights, medical) and earnings do the referent occupation's incumbents receive?

(6) Are contracts regulated by the government (e.g., Fair Labor Standards; Affirmative Action)? By unions?

Job Training Relationships

To place the interorganizational training practices into clearer context, we also must measure the extent to which formal training takes place inside an establishment (we assume that all informal training, which is very hard to measure, takes place inside the organization). The interview's training section will begin with the filter item similar to one used in the 1991 NOS: "Apart from on-the-job training, in the past two years did (ORG) provide any employees with formal job training, either on or off the premises?" If an ego organization conducted no formal training programs (slightly more than a quarter of the size-weighted 1991 NOS establishments), the questionnaire will skip to the next section. For focal organizations with some formal training, the informant first will be asked about any training that was conducted on-site entirely by the establishment's own training staff (not counting staff on loan from the parent organization). For example, which of the referent occupations were trained in what particular kinds of skills? What were the main reasons for providing the training? How many employees took part in each program and how were they selected? What was the duration of each training program? What training staff resources were applied in each instance? What kinds of evaluations of training outcomes were made?

Next, for each referent occupation, informants will be asked whether their establishment conducted any training during the past two years, either on- or off-site, in conjunction with such alter organizations as labor unions, parent organizations, and public- and private-sector providers (for example, community colleges, commercial vendors, and customer firms). After interviewers have inventoried the names of all provider organizations, they will ask the informants for details on each external training relation: At what physical sites did training occur? Which organizations trained which occupations in what particular skills? Why did the focal organization choose this particular provider? Were any alternative providers available in

the market, and did the focal organization investigate using these sources instead? How often has the ego organization used this provider in the past? What were the financial arrangements and the contractual stipulations governing the exchange? Did the focal organization's training staff collaborate in delivering the vendor's service? How many employees were trained and how were they selected? What was the duration of each program? How satisfied was the organization with the training?

Other Measures

In order to test the research hypotheses outlined above, we will collect information on such environmental characteristics as: concentration, competition and other features of product markets; the organization's exposure to sources of prevailing standards, accrediting bodies, regulatory agencies, and other indicators of institutionalization; unions; changes in technology (such as the use of computers and automation); labor market supply and demand in the different occupations; and the ego organization's relations with customers and suppliers in output and input markets. We must also control for variation among establishments' internal organizational structures and workforce composition. We will draw many items from the 1991 NOS survey to measure a variety of formal organizational structures, including: vertical and horizontal differentiation; centralization of decision-making; firm internal labor markets; and formalization. Other NOS indicators will measure an organization's workforce composition in terms of gender and race, and the overall proportions in part-time, temporary, and subcontracting relations. (See Marsden *et al.* 1994 for the 1991 NOS organizational structure and environment indicators.)

Analyses

We will begin by analyzing the cross-sectional and retrospective data gathered in the first wave of the survey. The research hypotheses stated above will be examined using multivariate methods such as we used in analyzing the 1991 NOS. Because our proposed survey design specifies that data will be gathered about several occupations within each organization studied, multilevel analyses (Bryk and Raudenbush 1992) will be used where appropriate in studying questions about training and labor contracting. An additional payoff to the project will come with analyses of the longitudinal data that will become available with the completion of the second wave of interviews. We will then be able to examine questions about the stability of particular contracting and training relationships over the two-year period, and study factors associated with the initiation of new relationships as well as the termination of old ones. At a different level, we will be able to study changes in the use of "labor-networking" as a strategy, irrespective of whether there are exchanges in the specific partners involved with a focal organization. Will the apparent current movement toward increased use of subcontractors and contingent/temporary workers continue into the late 1990s? Where is it expanding most rapidly, and which employers are turning to still newer strategies to increase worker performance and firm flexibility?

We will examine the over-time changes in ego-centered organizations' network properties by estimating equations taking the following general form:

$$\hat{N}_{i,t_2} = \beta N_{i,t_1} + \sum_k \gamma_k X_{k,i,t_1} + \sum_k \delta_k N_{i,t_1} X_{k,i,t_1} + \lambda \sigma_i$$

where: (1) the two N's are an occupation-specific network measure for establishment I at 1998 and 1996, respectively, and whose coefficient reveals the stability of the relation over time; (2) the X's are measures of k antecedent organizational and environmental characteristics whose coefficients reveal the truth-value of the research hypotheses (or are present as control variables, such as size and age); (3) the NX's are product terms whose coefficients indicate whether a dependent network property is conditioned by an interaction between the network and the antecedent organizational and environmental factors; and (4) sigma is a measure controlling for sample-selection bias that may arise because of attrition through organizational death and/or refusal during the two-year panel (Heckman 1979). As with the 1991 NOS, the results of our analyses will be presented initially at professional conferences and eventually published in both journal article and book form.

References

- Abraham, Katherine G. 1988. "Flexible Staffing Arrangements and Employers' Short-term Adjustment Strategies." National Bureau of Economic Research Working Paper No. 2617. Cambridge, MA: NBER.
- Aldrich, Howard E. 1989. "Networking Among Women Entrepreneurs." Pp. 13-132 in *Women-Owned Businesses*, edited by Oliver Hagan, Carol Rivchun and Donald Sexton. New York: Praeger.
- Aldrich, Howard E. and Peter V. Marsden. 1988. "Environments and Organizations." Pp. 361-92 in *Handbook of Sociology*, edited by Neil Smelser. Newbury Park, CA: Sage.
- Appelbaum, Eileen and Rosemary Batt. 1994. *The New American Workplace: Transforming Work Systems in the United States*. Ithaca: ILR Press.
- Baker, Wayne E. 1992. "The Network Organization in Theory and Practice." Pp. 397-429 in *Network Organizations*, edited by Nitin Nohria and Robert G. Eccles. Cambridge, MA: Harvard Business School Press.
- Baron, James N., Frank R. Dobbin and P. Devereux Jennings. 1986. "War and Peace: The Evolution of Modern Personnel Administration in U.S. Industry." *American Journal of Sociology* 92:350-383.
- Barley, Stephen R., John Freeman, and Ralph C. Hybels. 1992. "Strategic Alliances in Commercial Biotechnology." Pp. 311-347 in *Network Organizations*, edited by Nitin Nohria and Robert G. Eccles. Cambridge, MA: Harvard Business School Press.
- Berg, Ivar (ed.). 1981. *Sociological Perspectives on Labor Markets*. New York: Academic Press.
- Bryk, Anthony W. and Raudenbush, Stephen W. 1992. *Hierarchical Linear Models*. Newbury Park, CA: Sage.
- Burt, Ronald S. 1992. *Structural Holes*. Cambridge, MA: Harvard University Press.
- Cappelli, Peter. 1996. "Forces Driving the Restructuring of Employment." In *Change at Work*, edited by Peter Cappelli. New York: Oxford University Press(forthcoming).
- Carlton, Dennis W. and Jeffrey M. Perloff. 1994. *Modern Industrial Organization*. 2nd Ed. New York: Harper Collins.

- Carnevale, Anthony P., Leila J. Gainer and Janice Villet. 1990. *Training in America: The Organization and Strategic Role of Training*. San Francisco: Jossey-Bass.
- Davis, Gerald F., Kristina A. Diekmann and Catherine H. Tinsley. 1994. "The Decline and Fall of the Conglomerate Firm in the 1980s: The Deinstitutionalization of an Organizational Form." *American Sociological Review* 59:547-70.
- Farkas, George and Paula England. 1988. *Industries, Firms, and Jobs: Sociological and Economic Approaches*. New York: Plenum.
- Ferman, Louis A., Michele Hoyman, Joel Crutcher-Gershenfeld and Ernst J. Savoie (eds.). 1991. *Joint Training Programs: A Union-Management Approach to Preparing Workers for the Future*. Ithaca, NY: ILR Press.
- Frazis, Harley J., Diane E. Herz and Michael W. Horrigan. 1995. "Employer-provided Training: Results from a New Survey." *Monthly Labor Review* 118(5): 3-17.
- Gerlach, Michael. 1992. *Alliance Capitalism: The Social Organization of Japanese Business*. Berkeley, CA: University of California Press.
- Ghoshal, Sumantra and Christopher A. Bartlett. 1990. "The Multinational Corporation as an Interorganizational Network." *Academy of Management Review* 15:603-625.
- Granovetter, Mark. 1985. "Economic Action and Social Structure: The Problem of Embeddedness." *American Journal of Sociology* 91:481-510.
- _____. 1988. "The Sociological and Economic Approaches to Labor Market Analysis: A Social Structural View." Pp. 187-216 in *Industries, Firms, and Jobs: Sociological and Economic Approaches*, edited by George Farkas and Paula England. New York: Plenum.
- Hariato, Farad and Johannes M. Pennings. 1990. "Technological Innovation Through Interfirm Linkages." Pp. 15-41 in *Strategic Management in High Technology Firms*, edited by Michael W. Lawless and Luis R. Gomez-Mejia. Greenwich, CT: JAI Press.
- Harrison, Bennett. 1994. *Lean and Mean: The Changing Landscape of Corporate Power in the Age of Flexibility*. New York: Basic Books.
- Heckman, James J. 1979. "Sample Selection Bias as a Specification Error." *Econometrica* 47:153-161.
- Ibarra, Herminia. 1993. "Personal Networks of Women and Minorities in Management: A Conceptual Framework." *Academy of Management Review* 18:56-87.
- Kalleberg, Arne L., David Knoke, Peter V. Marsden, and Joe L. Spaeth. 1996. *Organizations in America: A Portrait of Their Structures and Human Resources Practices*. Newbury Park, CA: Sage.
- Kalleberg, Arne L., Peter V. Marsden, Howard E. Aldrich, and James W. Cassell. 1990. "Comparing Organizational Sampling Frames." *Administrative Science Quarterly* 35:658-688.
- Kalleberg, Arne L. and Torger Reve. 1993. "Contracts and Commitment: Economic and Sociological Perspectives on Employment Relations." *Human Relations* 46:1103-1132.
- Kelley, Maryellen R. 1993. "Organizational Resources and the Industrial Environment: The Importance of Firm Size and Inter-firm Linkages to the Adoption of Advanced Manufacturing Technology." *International Journal of Technology Management* 8:36-68.
- Knoke, David. 1996. "Job Training Programs and Practices." In *Change at Work*, edited by Peter Cappelli. New York: Oxford University Press(forthcoming).
- Knoke, David and Miguel Guilarte. 1995. "The Network Analysis of Social Structure." *Current Perspectives in Social Theory Supplement* 1:77-115.

- Knoke, David and Yoshito Ishio. 1994. "Occupational Training in Organizations: Job Ladders and Unions." *American Behavioral Scientist* 37:992-1016.
- Knoke, David and Arne L. Kalleberg. 1994. "Job Training in U.S. Organizations." *American Sociological Review* 59:537-546.
- Knoke, David and Naomi J. Kaufman. 1990. "Organizational Power." Pp. 85-118 in *Political Networks: The Structural Perspective*, by David Knoke. New York: Cambridge University Press.
- Knoke, David, Franz Urban Pappi, Jeffrey Broadbent and Yutaka Tsujinaka. 1996. *Comparing Policy Networks: Labor Politics in the U.S., Germany, and Japan*. New York: Cambridge University Press.
- Kochan, Thomas A., Harry C. Katz and Robert B. McKersie. 1986. *The Transformation of American Industrial Relations*. New York: Basic Books.
- Lawler, Edward E. III. 1992. *The Ultimate Advantage*. San Francisco: Jossey-Bass.
- Lawler, Edward E., III, Susan Mohrman, and Gerald Ledford. 1992. *Employee Involvement and Total Quality Management: Practices and Results in Fortune 500 Companies*. San Francisco: Jossey-Bass.
- Lynch, Lisa M. (ed). 1994. *Private Sector and Skill Formation: International Comparisons*. Chicago: University of Chicago Press.
- Marsden, Peter V. 1994. "The Hiring Process: Recruitment Methods." *American Behavioral Scientist* 37:979-991.
- Marsden, Peter V., Cynthia R. Cook and David Knoke. 1994. "Measuring Organizational Structures and Environments." *American Behavioral Scientist* 37:891-910.
- Marsden, Peter V., and Jeanne S. Hurlbert. 1988. "Social Resources and Mobility Outcomes: A Replication and Extension." *Social Forces* 66: 1038-59.
- Mincer, Jacob. 1983. "Union Effects: Wages, Turnover, and Job Training." *Research in Labor Economics Supplement* 2:217-252.
- Noe, R. A. 1988. "Women and Mentoring: A Review and Research Agenda." *Academy of Management Review* 13:65-78.
- Nohria, Nitin and Robert G. Eccles (eds.). 1992. *Network Organizations*. Cambridge, MA: Harvard Business School Press.
- Aerial, Brian. 1994. "The New Deal: What Companies and Employees Owe One Another." *Fortune*, June 13: 44-52.
- Osterman, Paul (ed.). 1984. *Internal Labor Markets*. Cambridge, MA: MIT Press.
- _____. 1993. "Skill, Training, and Work Organization in American Establishments". Cambridge, MA: MIT Sloan School mimeo.
- _____. 1994. "How Common is Workplace Transformation and How Can We Explain Who Does It?" *Industrial and Labor Relations Review* 47:173-88.
- _____. 1995. "Skill, Training, and Work Organization in American Establishments." *Industrial Relations* 34:125-46.
- Parker, Robert E. 1994. *Flesh Peddlers and Warm Bodies: The Temporary Help Industry and Its Workers*. New Brunswick, NJ: Rutgers University Press.
- Powell, Walter W. 1987. "Hybrid Organizational Arrangements: New Form or Transitional Development?" *California Management Review* 30:1:67-87.
- _____. 1990. "Neither Market Nor Hierarchy: Network Forms of Organization." *Research in Organizational Behavior* 12:295-336.

- Rousseau, Denise M. 1990. "New Hire Perceptions of Their Own and Their Employer's Obligations: A Study of Psychological Contracts." *Journal of Organizational Behavior* 11:389-400.
- Rousseau, Denise M. and Judi McLean Parks. 1992. "The Contracts of Individuals and Organizations." *Research in Organizational Behavior* 15:1-43.
- Scott, W. Richard. 1992. *Organizations: Rational, Natural, and Open Systems*. 3rd Edition. Engelwood Cliffs, NJ: Prentice-Hall.
- Scott, W. Richard and John W. Meyer. 1991. "The Rise of Training Programs in Firms and Agencies: An Institutional Perspective." *Research in Organizational Behavior* 13:297-326.
- Spaeth, Joe L. and Diane P. O'Rourke. 1994. "Designing and Implementing the National Organizations Study." *American Behavioral Scientist* 37:872-90.
- Useem, Michael. 1993. *Executive Defense: Shareholder Power and Corporate Reorganization*. Cambridge, MA: Harvard University Press.
- Waterman, Robert H., Jr., Judith A. Waterman and Betsey A. Collard. 1994. "Toward a Career Resilient Workforce." *Harvard Business Review*, July-August: 87-95.
- Wyatt Company. 1993. *Best Practices in Company Restructuring*. New York: Wyatt Company.

Measuring Densities Based Upon Foci of Activity

Scott L. Feld
Louisiana State University

The "density" of a personal network is the extent to which an actor's associates have social relations with one another. Unfortunately, only a few studies have even attempted to collect information on density of large personal networks, and these have been intensive studies of relatively small numbers of subjects for whom it was practical to collect detailed information from each respondent (e.g. Wellman and Wortley, 1990; Boissevain, 1974). For large scale survey research, such detail is impractical.

The following set of questions is designed to use theoretical understandings about the nature of networks to reduce the amount of information that must be elicited from respondents in order to provide reasonable estimates of the densities of personal networks.

The present approach derives from the theoretical argument that has been supported by research findings that most associates are drawn from those types of sources that may be reasonably regarded as foci of activity; specifically family, neighborhood, workplace, and church (Feld, 1981,1982; Fischer,1982; Boissevain,1974). The nature of focused organization is such that associates who share a focus of activity tend to know one another; i.e. the density among the subset of associates sharing a focus of activity tends to be high. Consequently, the density of a larger set of associates should be a function of the concentration of associates from the same focus source, and the typical relationships between associates from different sources.

For example, if all associates are drawn from the same focus source (e.g. the family), then the density is determined to be nearly perfect. If associates are drawn from two such sources, then the density is primarily determined by the proportion of pairs of associates drawn from the same source, and by the proportion of pairs from different sources who are tied. If there are several sources, then there are more different subsets of connections to consider.

For example, Figure 1 represents a matrix of interrelations of associates who are drawn from four different foci of activity, W, X, Y, and Z. The matrix is subdivided into regions such that w,x,y, and z represent the internal connections within the set associated with each focus, and a,b,c,d, e, ... represent the connections between individuals from pairs of different foci. One could ask respondents a long list of questions corresponding to each of the

	W	X	Y	Z	
W	w	a	b	c	r _w
X	d	x	e	f	r _x
Y	g	h	y	i	r _y
Z	j	k	l	x	r _z

Figure 1. Foci of activity.

sections identified; e.g. a)to what extent do your relatives know your neighbors? b)your co-workers? c)your fellow church members? etc. However, the number of different regions in the matrix, and therefore the number of required questions for m foci, is $m*(m-1)/2$, which increases rapidly with the number of foci; e.g, it is 6 for four different foci, and 10 for five.

Instead, we can recover most of the relevant information by asking a smaller set of questions; specifically, to what extent do your family know your non-family? Your neighbors know your non-neighbors? Etc. These questions do not allow us to determine the extent of connections between each pair of foci, but summarize all of the connections between each focus and the others from all other foci together. That procedure requires only m questions that seem easier for respondents to answer. The questions give us the extent of connections for each focus, with the exception of the connections within the focus itself; e.g. for W , the question elicits the connections in the W row (r_w) with the exception of the connections within W itself (w); i.e. r_w-w . Some specific questions that have been used for measuring density based upon the sources of associates in foci of activity (Feld and Beggs, 1995) are shown in Figure 2.

Q1. About how many relatives (outside your household) did you talk to at least once a month [in the six months before the hurricane]?

[The identical question was asked for: neighbors (within a mile); people at work; friends from church.]

Q2. Among those talked to at least monthly [in the six months before the hurricane], would you say: Most of those relatives you talked to know none, some, most, or almost all of the NONrelatives you talked to?

[The identical question was asked for: neighbors (within a mile); people at work; friends from church.]

Figure 2. Questionnaire items.

Based upon the proportion of associates within a focus who know one another, the density within each focus (D_i), and the extent of connections of each focus to others (d_i for each focus, i), and the proportions of associates drawn from each focus (p_i for each focus, i), one can calculate the overall density of a person's social network by using the following formula.¹

$$\sum_i [p_i p_i D_i + p_i (1 - p_i) d_i]$$

For calculating an overall measure of density from these data, certain quantitative assumptions need to be made. Specifically, quantitative assumptions need to be made about the density of associates who share each focus of activity, D_i , and about the proportions who know others corresponding to "none," "some," "most," "almost all," the d_i .

Based upon previous research, a reasonable assumption might be that 80% of people within the same focus know each other (Feld, 1982). For proportions who know one another for each

¹This expression assumes that density is based upon the relations of all associates to all other associates, including themselves. While it is more meaningful to exclude relationships to self, it makes little difference for large numbers of associates. The expressions are considerably simpler and more comprehensible in this form.

focus, reasonable interpretations of the words "none," "some," "most," and "almost all" might be 0%, 25%, 60%, and 80%.

These quantitative assumptions are necessarily arbitrary, and research is needed to determine the sensitivity of the values of density to the particular quantitative assumptions. Also, research is needed to contrast these measures of density with measures of density derived using other techniques. Preliminary analyses based upon one population sample of approximately 600 cases indicate that the values derived based upon these assumptions were highly correlated with values based upon several other reasonable modifications of these assumptions, and that this approach can be partially validated by correlations with other measures (Feld and Beggs, 1995). Nevertheless, more research is needed to refine and validate these measures; this note is intended to stimulate and encourage such research.

References

- Boissevain, Jeremy. 1974. *Friends of Friends: Networks, Manipulators, and Coalitions*. New York: St. Martin's Press.
- Feld, Scott L. 1981. "The Focused Organization of Social Ties." *American Journal of Sociology* 86:1015-1035.
- _____. 1982. "Social Structural Determinants of Similarity Among Associates." *American Sociological Review* 47:797-801.
- Feld, Scott L. and John J. Beggs. 1995. "Contrasting Measures of Densities of Personal Networks." Unpublished manuscript. Louisiana State University. Baton Rouge.
- Fischer, Claude S. 1982. *To Dwell Among Friends: Personal Networks in Town and City*. Chicago: University of Chicago Press.
- Wellman, Barry and Scot Wortley. 1990. "Different Strokes from Different Folks: Community Ties and Social Support." *American Journal of Sociology* 96:558-588.

Treating 2-Mode Data as a Network¹

Stephen P. Borgatti
University of South Carolina

Suppose you have a 2-mode data matrix such as the well-known Davis, Gardner & Gardner (1941) women-by-events data, as shown here:

	1	2	3	4	5	6	7	8	9	0	1	1	1	1
EVELYN	1	1	1	1	1	1	0	1	1	0	0	0	0	0
LAURA	1	1	0	1	1	1	1	0	0	0	0	0	0	0
THERESA	0	1	1	1	1	1	1	1	0	0	0	0	0	0
BRENDA	1	0	1	1	1	1	1	0	0	0	0	0	0	0
CHARLOTTE	0	0	1	1	1	0	1	0	0	0	0	0	0	0
FRANCES	0	0	1	0	1	1	0	1	0	0	0	0	0	0
ELEANOR	0	0	0	0	1	1	1	1	0	0	0	0	0	0
PEARL	0	0	0	0	0	1	0	1	1	0	0	0	0	0
RUTH	0	0	0	0	1	0	1	1	0	0	0	0	0	0
VERNE	0	0	0	0	0	0	1	1	0	0	1	0	0	0
MYRNA	0	0	0	0	0	0	0	1	1	1	0	1	0	0
KATHERINE	0	0	0	0	0	0	0	1	1	1	0	1	1	1
SYLVIA	0	0	0	0	0	0	1	1	1	1	0	1	1	1
NORA	0	0	0	0	0	1	1	0	1	1	1	1	1	1
HELEN	0	0	0	0	0	0	1	1	0	1	1	1	1	1
DOROTHY	0	0	0	0	0	0	0	1	1	1	0	1	0	0
OLIVIA	0	0	0	0	0	0	0	0	1	0	1	0	0	0
FLORA	0	0	0	0	0	0	0	0	1	0	1	0	0	0

Typically, we don't think of such data as relational, at least not unless we derive from those data a woman-by-woman matrix that records the number of events they attended in common. Then we say the women are linked through these events.

We especially don't think of 2-mode data as relational when the rows are respondents and the columns attributes of the respondents, such as attitude statements which the respondent has been asked to agree or



disagree with. These are the much maligned "mainstream" datasets which record data about attributes *rather than* relations.

But the 2-mode data are relational. It is simply that the relation is between two distinct sets of objects (e.g., women and events) rather than a single set of objects. So why shouldn't we treat the data as a *network* and apply the usual network analytic techniques? Is the idea that the nodes in a network might be drawn from two different classes of objects so strange as to be inconceivable? It shouldn't be: the objective of most positional and relational analysis techniques is in fact to partition the set of nodes into two or more distinct classes! All networks contain nodes of different types since the typing of nodes is done by the researcher — it is not inherent in the network.

Yet there is something special about a network formed by a 2-mode dataset: it is bipartite. The only ties in the network are *between* node classes; there are no ties *within* classes. In the Davis *et al.* data, this means there are no woman-to-woman ties and no event-to-event ties, but there are plenty of woman-to-event ties.

Conceptually, then, there is no problem with thinking of 2-mode data as a (bipartite) network. But how do we actually work with 2-

¹*Techniques* is a regular column devoted to techniques of data construction, management, interpretation and analysis. Contributions are appreciated.

		1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2				
1	EVELYN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	LAURA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	THERESA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	BRENDA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	CHARLOTTE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	FRANCES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	ELEANOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	PEARL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	RUTH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	VERNE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	MYRNA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	KATHERINE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	SYLVIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	NORA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	HELEN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	DOROTHY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	OLIVIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	FLORA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	E1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	E2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	E3	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	E4	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	E5	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	E6	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	E7	0	1	1	1	1	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	E8	1	1	1	1	0	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	E9	1	0	1	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	E10	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	E11	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	E12	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	E13	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	E14	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Figure 1. Adjacency matrix for bipartite network.

mode data as if it were a network? The data matrix is not even square! The trick is to realize that the 2-mode matrix is just a piece of the network adjacency matrix. It is the upper right quadrant, in fact (see Figure 1 below). The upper left quadrant of this matrix is a square, woman-by-woman submatrix of all zeros, indicating that there were no ties among women. The bottom right quadrant is a square event-by-event submatrix, also all zeros, indicating that there are no ties among the events either.

The bottom left quadrant is the transpose of the original 2-mode matrix. This reflects my choice that there be no direction in the women-to-event ties. However, it is just as reasonable to consider that women in this case are the choosing agents, so ties should go from women to events but not the other way around. In that case, the bottom left quadrant should be made to be all zeros.

To actually construct this matrix in a computer program such as UCINET IV (Borgatt *et al.* 1992), you can run these steps:

1. Create a woman-by-woman matrix of all zeros. An easy way to do this without having to re-enter the women's names is to compute correlations among the rows of the 2-mode matrix, then dichotomize the result so that any value smaller than 2 becomes 0.
2. Merge the woman-by-woman with the original woman-by-event by *columns*, creating a woman-by-(woman+event) matrix which represents the top half of the matrix we trying to build.
3. Transpose the original dataset to obtain an event-by-woman matrix (which optionally you can recode to all zeros).
4. Create an event-by-event matrix by the methods in step 1.

5. Merge the event-by-woman matrix with the event-by-event matrix by *columns* to create an event-by-(woman+event) matrix which represents the bottom half of the desired matrix.

6. Merge the matrix from step 3 with the matrix from step 5 by *rows*, to create the (woman+event)-by-(woman+event) matrix that is the adjacency matrix of the bipartite network, as shown in Figure 1.

Once you have this matrix, you can draw it using a standard network drawing program such as KRACKPLOT (Krackhardt *et al.* 1994), or run standard analyses such as clique-detection, centrality, etc. A drawing of the network using KRACKPLOT version 3.0 is shown in Figure 2. (It should be noted that the

figure is a screen dump and does not reflect the quality of output that the program is capable of.)

References

Borgatti, S.P. and M.G. Everett. 1992. *UCINET IV Version 1.0*. Columbia: Analytic Technologies

Davis, A., B.B. Gardner and M.R. Gardner. 1941. *Deep South: A Social Anthropological Study of Caste and Class*. Chicago: University of Chicago Press.

Krackhardt, D., J. Blyth and C. McGrath. 1994. "Krackplot 3.0: An improved network drawing program." *Connections* 17(2):53-55.

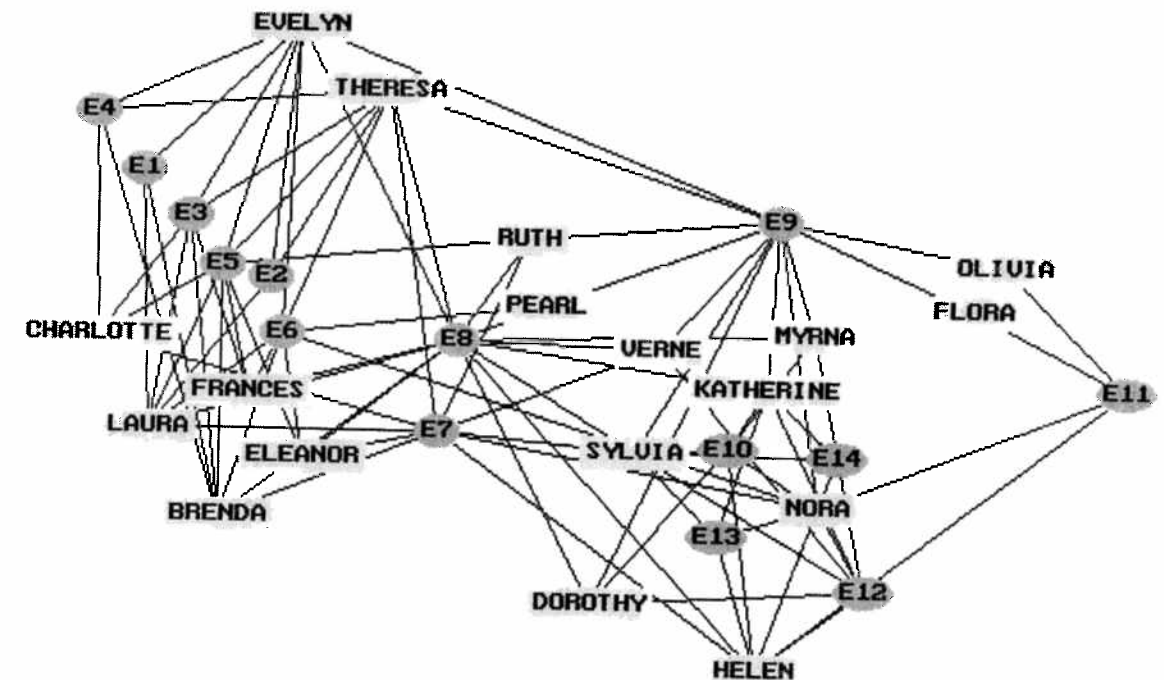


Figure 2. Davis, Gardner & Gardner data treated as a (bipartite) network.

Articles and Chapters

Abbott, Andrew. 1995. Sequence Analysis: New Methods for Old Ideas. *Annual Review of Sociology*. 21:93-113.

A wide variety of work in social science concerns sequences of events or phenomena. This essay reviews concepts of sequence and methods for analyzing sequences. After a brief definitional discussion, I consider sequence literatures from various areas. I then discuss recent methodologies for sequence analysis. I review stepwise approaches like Markovian and event history analysis as well as whole sequence approaches resting on new developments in biology and other fields.

Andersen, Ronald M. 1995. Revisiting the Behavioral Model and Access to Medical Care: Does it Matter? *Journal of Health and Social Behavior*. 36:1-10.

The Behavioral Model of Health Services Use was initially developed over 25 years ago. In the interim it has been subject to considerable application, reprobation, and alteration. I review its development and assess its continued relevance.

Barnett, William P. and Glenn R. Carroll. 1995. Modeling Internal Organizational Change. *Annual Review of Sociology*. 21:217-136.

Organizational change can be usefully conceptualized in terms of both its process and its content. Process refers to how change occurs. Content describes what actually changes in the organization. Theories and analyses of organizational change seek to explain why organizations change as well as what the consequences are of change. Empirical evidence on both questions is fragmentary and occasionally contradictory.

Models that consider both process and content show the greatest potential for resolving this situation. Such models can be used to test social science theories as well as to evaluate programs of organizational change promulgated by consultants and practitioners. Basic organizational theory would be enhanced by greater attention to organizational change.

Batagelj, Vladimir and Matevz Bren. 1995. Comparing Resemblance Measures. *Journal of Classification*. 12:73-90.

In the paper some types of equivalences over resemblance measures and some basic results about them are given. Based on induced partial orderings on the set of unordered pairs of units a dissimilarity between two resemblance measures over finite sets of units can be defined. As an example, using this dissimilarity standard association coefficients between binary vectors are compared both theoretically and computationally.

Belley, Jean-Guy, André Billette, Louis Rasmussen et Robert M. Thompstone. 1995. Modernism la Confiance L'assurance-Qualité Comme Décontextualisation de la Sous-Traitance Industrielle. *Canadian Review of Sociology and Anthropology*. 2:1-24.

Quality assurance is an institution typical of the global economy in the context of advanced modernity. It decontextualizes economic behavior in time and space (Luhmann, Giddens). An empirical study of the relations between Alcan Canada Ltd. and five subcontracting firms operating in the Saguenay Lac Saint Jean area of Quebec shows that the abstract and extralocal standards of quality assurance transform the subcontractors social processes of selection and performance evaluation. The participation of quality assurance experts in

the interfirm relationships lessens the reliance on traditional relationships of trust, in favor of a new trust in abstract systems and expertise.

L'assurance-qualité est une institution typique de la globalisation de l'économie dans le contexte de la modernité avancée. Elle décontextualise les comportements économiques dans le temps et dans l'espace (Luhmann, Giddens). Une étude empirique des relations d'Alcan Canada limitée avec cinq entreprises de la région du Saguenay Lac Saint Jean (Québec) montre que les standards abstraits et extralocaux de l'assurance-qualité changent le processus social de sélection et d'évaluation du rendement des sous-traitants. L'intervention des experts de l'assurance-qualité dans les relations interfirmes diminue l'importance des rapports de confiance traditionnels au profit d'une nouvelle confiance-système.

Berkowitz, S. D. and William Fitzgerald. 1995. Corporate Control and Enterprise Structure in the Canadian Economy: 1972-1987. *Social Networks*. 17:111-127.

Earlier work has examined corporate control, enterprise structure, and horizontal concentration within the Canadian economy (Berkowitz et al., 1978/1979). Moderately little change was observed in the number of firms and mappings of firms to standard industrial classification areas during the 15 year period in question. There was a considerable decrease in the number of both single-firm and multiple-firm enterprises over this time period. Mean and median enterprise size (number of firms) had increased, while horizontal integration and therefore (as they have traditionally been calculated) conventional measures of corporate concentration within industrial areas, have remained substantially unchanged except in the case of a few marginal industries. The Gini indices of the number of firms mapped to enterprises are substantially the same for the two years measured. There was, however, considerable significant and economically

important change in the Canadian corporate system. This change was entirely structural and involved a considerable reduction in the number, and an increase in the strategic importance of, enterprises.

Blau, Peter M. 1995. A Circuitous Path to Macrostructural Theory. *Annual Review of Sociology*. 21:1-19.

I introduce this memoir about my academic career by describing the fortuitous incidents involved in my coming to this country and becoming a sociologist. In graduate school my sociological orientation changed under the influence of Merton and Lazarsfeld from grand theories to systematic theory grounded in research. My dissertation was a field study of bureaucracy in terms of Weber's theory, which led to a book on exchange theory. Next I collaborated with Duncan on a nationwide study of occupational achievement and mobility, for which I learned regression analysis, reluctantly at first, but later becoming converted to it. During the next decade I conducted a research program on bureaucracy, specifically of quantitative studies of various types of formal organizations, from which I developed a limited organizational theory. The limitations of this theory prompted me to construct a formal macrostructural theory of population structure's influences on intergroup relations, which was subsequently tested in empirical research on the 125 largest metropolitan areas in the United States.

Breiger, Ronald L. 1995. Social Structure and the Phenomenology of Attainment. *Annual Review of Sociology*. 21:115-136.

Reviews of recent research on the transmission of socioeconomic advantage have decried the increasing "narrowness" of the field. This chapter focuses on an alternative proposition, namely, that there is now a large enough body of work seeking fundamentally to reorient the field of social attainment studies that it is

useful to identify commonalities as well as distinctive features. Conceptualization and operationalization of "social structure" in recent stratification research is the point of departure. Special attention is given to contemporary efforts to formulate a new phenomenology of attainment. In light of the many connections that are illuminated when these diverse strands are brought together, it is worthwhile to review them within the same scope and to discuss the prospect that they will form into a single specialty area within sociology.

Briggs, Harold E. and Nancy M. Koroloff. 1995. Enhancing Family Advocacy Networks: An Analysis of the Roles of Sponsoring Organizations. *Community Mental Health Journal*. 31(4):317-330

Family participation in shaping system reforms in children's mental health has increased over the past ten years. In 1990 the National Institute of Mental Health funded the development and enhancement of 15 statewide advocacy organizations that were to be controlled and staffed by families of children who have serious emotional disorders. These family advocacy organizations had three major goals: to establish support networks, to advocate for service system reforms, and to develop statewide family advocacy networks. Seven family advocacy networks work with sponsoring organizations because they needed assistance and/or could not receive funding directly. State and local chapters of the National Alliance for the Mentally Ill and the National Mental Health Association served in this capacity. Because there were no guidelines to educate sponsoring organizations about their interorganizational roles and responsibilities, staff of some sponsoring organizations used approaches that were supportive and effective, while staff in other organizations used methods that were counterproductive. The information and recommendations discussed in this paper are

based on evaluation data and observations of the relationships between seven sponsoring organizations and family advocacy groups over a three-year period. This paper proposes a conceptual framework that includes (1) a clear definition of the sponsoring organization's roles, and (2) an analysis of the advantages, limitations, and critical issues for the sponsoring organization.

Burger, Edith and Robert M. Milardo. 1995. Marital Interdependence and Social Networks. *Journal of Social and Personal Relationships*. 12(3):403-415.

In an exploratory study of 25 wives and their husbands we examine the associations of spouses with kin and friends as predictors of four marital qualities: love, maintenance, conflict and ambivalence. For husbands, contact with kin, and especially fathers, is tied to greater marital interdependence and lower conflict. For wives, contact with kin, and especially brothers-in-law, is consistently associated with greater marital distress in the form of lower love for her husband and reports of greater conflict and ambivalence on the part of both spouses. Husbands also report greater conflict and ambivalence when their wives interact frequently with friends. Overall, the findings suggest the effects of kin are heterogeneous, varying substantially by the type of role relation, and that the processes underlying relations with kin are distinctly different for wives and husbands.

Carroll, J. Douglas and Suzanne Winsberg. 1995. Fitting an Extended INDSCAL Model to Three-Way Proximity Data. *Journal of Classification*. 12:57-71.

The INDSCAL individual differences scaling model is extended by assuming dimensions specific to each stimulus or other object, as well as dimensions common to all stimuli or objects. An "alternating maximum likelihood" procedure is used to seek maximum likelihood estimates of all parameters of this EXSCAL

(Extended INDSCAL) model, including parameters of monotone splines assumed in a "quasi-nonmetric" approach. The rationale for and numerical details of this approach are described and discussed, and the resulting EXSCAL method is illustrated on some data on perception of musical timbres.

Caulkins, Douglas. 1995. Are Norwegian Voluntary Organizations Homogeneous Moralnets? Reflections on Naroll's Selection of Norway as a Model Society. *Cross-Cultural Research*. 29(1):43-57.

In *The Moral Order*, Raoul Naroll outlines five steps in the development of sociometrics, a discipline for guiding human affairs. After establishing a set of core values, Naroll shows that Norway does better than other countries in achieving goals based on those values. He also details the theory and evidence for the importance of moralnets in preventing or ameliorating social problems. One inference untested by Naroll is that Norway, a model society with the highest score for social well-being, has strong moralnets (moral networks). This article argues that Norway's numerous voluntary organizations and clusters of ideologically homogeneous organizations are often linked in networks that have all of the characteristics that Naroll attributed to moralnets. Data from community case studies in Norway fit Naroll's moralnet theory better than they fit the competing theory of structural limitation of conflicts through cross-cutting ties.

Chase-Dunn, Christopher and Peter Grimes. 1995. World-Systems Analysis. *Annual Review of Sociology*. 21:387-417.

This is a review of recent research on world-systems. We cover studies of the current system and studies that compare the contemporary global system with earlier, smaller intersocietal systems. Research on the cycles and secular trends found in the modern world-system is discussed at length. This

includes an examination of economic cycles of various lengths as well as their links with broader cycles like the rise and fall of hegemonic core powers, international financial crises, and the cycle of global war. We also survey recent studies of core-periphery hierarchy.

Corcoran, M. 1995. Rags to Rages: Poverty and Mobility in the United States. *Annual Review of Sociology*. 21:237-267.

Early arguments over the "culture of poverty" assumed considerable intergenerational transmission of poverty but differed over whether this was due to cultural inadequacies of the poor or to structural barriers and discrimination faced by the poor. These arguments subsided by the 1970s when quantitative social stratification studies such as Blau & Duncan (1967) found that intergenerational socioeconomic mobility was considerable and that there was little evidence for a "vicious cycle of poverty." In the 1980s the issue of intergenerational poverty reemerged when research on new longitudinal datasets suggested that both intragenerational and intergenerational poverty were more persistent than analyses based on cross-sectional data had suggested. Four new theoretical perspectives were developed to explain intergenerational poverty: the resources model, the correlated disadvantages model, the welfare culture model, and Wilson's (1987) underclass model. This review summarizes and evaluates recent empirical research on the extent to which being raised in poor families, in non-intact families, in welfare-dependent families, and/or in underclass neighborhoods facilitates or hinders children's adult attainments. The review assesses how well each of the four new models are supported by this research.

Dodd, Nigel. 1995. Money and the Nation-State: Contested Boundaries of Monetary Sovereignty in Geopolitics. *International Sociology*. 10(2):139-154.

Has international monetary integration undermined monetary sovereignty? In this paper, a sociological approach is taken towards two of the major conditions which are reputed to have contributed to the erosion of monetary sovereignty: financial deregulation and the growth of offshore markets. In the first section, the reconstruction of international monetary and financial networks is examined with particular reference to Japan, Germany and Britain. The concept of deregulation is questioned as a description of the regulatory changes which took place in these financial centers during the 1980s. In the second section, this argument is extended in an examination of the development of offshore markets during the past thirty years. These markets have relied upon substantial government encouragement, in addition to a high proportion of sovereign funds, in order to expand at the rate that they have: any perceived threat to monetary sovereignty posed by such markets must therefore be treated with caution. In the concluding section, the implications of monetary integration for two 'contested boundaries' within contemporary sociology — between geopolitics and international markets, on the one hand, and economy and society, on the other — are outlined, both in the context of debates over monetary sovereignty and in the light of arguments about the 'embeddedness' of economic action in recent sociological approaches to economic life.

Espenshade, Thomas J. 1995. Unauthorized Immigration to the United States. *Annual Review of Sociology*. 21:195-216.

This paper surveys research on the size of the undocumented immigrant population in the United States, the causes and consequences of illegal immigrant flows, public attitudes toward unauthorized migrants, and the history of attempts to control the volume of undocumented migration. It concludes that there are powerful push and pull factors that

create and sustain the volume of unauthorized migration, that there is little evidence that undocumented migrants have negative labor market consequences despite what the general public thinks, that US policy has been largely powerless to make a permanent dent in undocumented immigration, and that the current level of clandestine US immigration may not be far from what society might view as socially optimal.

Fantasia, Rick. 1995. From Class Consciousness to Culture, Action, and Social Organization. *Annual Review of Sociology*. 21:269-287.

For much of the postwar period in the United States, sociological research on class consciousness has tended to be limited to and by survey methods, with the result that class consciousness has been viewed as a static, individuated phenomenon, abstracted from social action and the context of class practices. However, in recent years a body of work has developed, often based upon the concept of class formation rather than the ideationally bound concept of class consciousness, that holds more promise. By drawing upon historical, ethnographic, and participant observation techniques, this work challenges conventional approaches and points toward promising new directions for future research. This article reviews recent examples of sociological research that has sought to ground consciousness in cultural practices, in collective action, and in forms of social organization

Felmlee, Diane H. 1995. Fatal Attractions: Affection and Disaffection in Intimate Relationships. *Journal of Social and Personal Relationships*. 12(2):295-311.

This research investigates the extent to which a quality that initially attracts one person to another in a romantic relationship is a positive dimension of the same overall characteristic that leads to subsequent disaffection — i.e. a

'fatal attraction'. Three hundred and one college women and men were asked to think of the most recent romantic relationship they had that ended, and to list qualities that first attracted them to that partner and characteristics they later 'least liked' about that partner. Results indicate that there were approximately 88 instances (in 29.2% of the breakups) of what appeared to be 'fatal attractions'. Certain types of characteristics, such as exciting and different, were also more likely to be 'fatal' than others. Additional findings point to sex differences in attracting qualities, with, for example, males reporting significantly more qualities than females in the *Physical* category. Implications of the results for dialectical relationship theories are discussed.

Fischer, Claude S. and Yossi Shavit. 1995. National Differences in Network Density: Israel and the United States. *Social Networks*. 17:129-145

Most sociological perspectives suggest that personal relations are shaped by broad societal structures, but there is relatively little systematic cross-national research on social networks. We replicated Fischer's (1982) study of northern Californians' networks in the Haifa, Israel, region. Results suggest that, in many respects, the networks did not differ much. Israelis, however, had networks that were denser than the Americans' networks — and denser than networks reported from elsewhere, too. While we cannot conclusively account for this difference, it probably reflects the differences between Israeli group orientation and American individualism.

Fligstein, Neil and Robert Freeland. 1995. Theoretical and Comparative Perspectives on Corporate Organization. *Annual Review of Sociology*. 21:21-43.

The study of corporate governance has expanded both its theoretical and its empirical scope. We define governance broadly to

include the social organization of firms and their relations to their suppliers, customers, competitors, and states. This review examines both economic and sociological theories to evaluate their efficacy at accounting for the comparative data on firms. Our review of the comparative literature suggests that there is no evidence of convergence across societies toward a single form of governance, and that this is mainly a function of three factors: the timing of entry into industrialization and the institutionalization of that process, the role of states in regulating property rights and rules of cooperation and competition between firms, and the social organization of national elites. The theories that function best are those that consider political, institutional, and evolutionary factors as causal. This is a cautious conclusion as many of the theories have not been evaluated because of the difficulty in producing comparative measures.

Flood, Ann Barry and Mary L. Fennell. 1995. Through the Lenses of Organizational Sociology: The Role of Organizational Theory and Research in Conceptualizing and Examining Our Health Care System. *Journal of Health and Social Behavior*. Extra Issue:154-169.

This paper reviews various theoretical perspectives on organizational change which have been and could be applied to medical organizations. These perspectives are discussed as both filters influencing our observations (research) and mirrors of the shifting dynamics of delivery system reform (policy). We conclude with an examination of how such theories can provide useful insights into our rapidly changing health care system.

Frank, Kenneth A. 1995. Identifying Cohesive Subgroups. *Social Networks*. 17:27-56.

Cohesive subgroups have always represented an important construct for sociologists who study individuals and organizations. In this

article, I apply recent advances in the statistical modeling of social network data to the task of identifying cohesive subgroups from social network data. Further, through simulated data, I describe a process for obtaining the probability that a given sample of data could have been obtained from a network in which actors were no more likely to engage in interaction with subgroup members than with members of other subgroups. I obtain the probability for a specific data set, and then, through further simulations, develop a model which can be applied to future data sets. Also through simulated data, I characterize the extent to which a simple hill-climbing algorithm recovers known subgroup memberships. I apply the algorithm to data indicating the extent of professional discussion among teachers in a high school, and I show the relationship between membership in cohesive subgroups and teachers' orientations towards teaching.

Freeman, Linton C. and Cynthia M. Webster. 1994. Interpersonal Proximity in Social and Cognitive Space. *Social Cognition*. 12(3):223-247.

We explore how humans solve some problems of living in a social world. In particular, we focus on the ability to see affiliation or alliance patterns in social communities. We draw on data from two naturalistic studies in which subjects were observed interacting and required to reveal their perceptions of the patterning of that interaction. In both cases, the observed interaction patterns and the subjects' reports correspond closely. But in both cases, subjects are shown to simplify and exaggerate the observed patterning. Individual subjects, moreover, appear able to reveal more details about interaction patterns among those with whom they interact frequently, while they gloss over details involving interaction among others with whom their own interaction is infrequent.

Gamson, William A. 1994. Hiroshima, the Holocaust, and the Politics of Exclusion: 1994 Presidential Address. *American Sociological Review*. 60:1-20.

In most societies, there is an ongoing contest over who is the "we," to whom specific moral obligations apply, and who is the "they," to whom they do not. This paper explores and contrasts the most blatant forms of active exclusion, which includes genocide, and indirect exclusion, which is characterized by subtle forms of exclusion through social invisibility. In genocide, the targeted groups are not simply excluded from life integrity rights, but offenses against them are explicitly encouraged, rewarded, and sanctioned by the regime. In indirect exclusion, the exclusion is implicit in cultural and institutional practices and is often unintentional. I examine the difficulties and dilemmas involved in resisting and preventing active exclusion and in challenging the cultural codes that maintain indirect exclusion.

Gnanadesikan, R., J. R. Kettenring and S. L. Tsao. 1995. Weighting and Selection of Variables for Cluster Analysis. *Journal of Classification*. 12:113-136.

One of the thorniest aspects of cluster analysis continues to be the weighting and selection of variables. This paper reports on the performance of nine methods on eight "leading case" simulated and real sets of data. The results demonstrate shortcomings of weighting based on the standard deviation or range as well as other more complex schemes in the literature. Weighting schemes based upon carefully chosen estimates of within-cluster and between-cluster variability are generally more effective. These estimates do not require knowledge of the cluster structure. Additional research is essential: worry-free approaches do not yet exist.

Groenen, Patrick J. F. and Rudolf Mathar. 1995. The Majorization Approach to

Multidimensional Scaling for Minkowski Distances. *Journal of Classification*. 12:3-19.

The majorization method for multidimensional scaling with Kruskal's STRESS has been limited to Euclidean distances only. Here we extend the majorization algorithm to deal with Minkowski distances with $1 \geq p \geq 2$ and suggest an algorithm that is partially based on majorization for p outside this range. We give some convergence proofs and extend the zero distance theorem of De Leeuw (1984) to Minkowski distances with $p > 1$.

Hage, Per and Frank Harary. 1995. Eccentricity and Centrality in Networks. *Social Networks*. 17:57-63.

The classic concept of centrality discovered by Camille Jordan in the 19th century is introduced as a model for social network analysis. It is generalized to include the path center of a graph and illustrated with an application to two island networks in Oceania. It is shown to be a necessary addition to the concepts of degree, closeness and betweenness centrality as distinguished by Freeman.

Haslam, Nick. 1995. Factors Structure of Social Relationships: An Examination of Relational Models and Resource Exchange Theories. *Journal of Social and Personal Relationships*. 12(2):217-227.

Although several accounts of elementary relational forms have been proposed, little empirical research has attempted to test, refine and compare them. Such research can strengthen claims that there are relational universals, and can provide a unifying framework and conceptual currency for further study. In the present study, the factor structure of 500 social relationships sampled from 50 undergraduate subjects was examined using items representing relational forms proposed by Fiske (1991) and Foa & Foa (1974). The results are interpreted in light of their implications for the internal organization

of the two theories, the interrelations of the two theories, and the relations of both theories to common dimensions of social relationships. It is argued that theories of the basic forms of social relationship must be revised in light of the empirical associations of their elements, and that the time is now ripe for confirmatory tests of these forms.

Hill, Stephen. 1995. The Social Organization of Boards of Directors. *British Journal of Sociology*. 46(2):245-278.

The analysis of the British corporate elite has been concerned with three issues. One is the relationship of ownership and control, a second is the cohesion of the upper or capitalist class, the third is the linkage between the corporate and political elites. The practical difficulties of investigating elites has restricted the information that can be collected and thus the range of researchable issues. This paper derives from an interview-based investigation among directors of major British companies and concentrates on a fourth set of issues, namely how a board of directors works as a social institution. The central activity of the corporate elite is its boardroom role and the organizational sociology of boards is a major missing link in existing analyses. The paper describes what directors do, the patterns of influence and the checks and balances within the boardroom, and the responsiveness of boards to shareholders. It discusses relevant features of directors' ideologies and world views. The analysis highlights the influence of the executive, notably the chief executive. Major shareholders are publicly committed to a more effective use of their powers of ownership and one mechanism is the reform of corporate governance, in particular an enhanced role for independent non-executive directors, in order to safeguard their interests and prevent undue executive domination of boards. This research suggests that an established boardroom culture may limit the effectiveness of the checks and balances that non-executive directors can provide.

Provan, Keith G. and H. Brinton Milward. 1995. A Preliminary Theory of Interorganizational Network Effectiveness: A Comparative Study of Four Community Mental Health Systems. *Administrative Science Quarterly*. 40:1-33.

This paper presents the results of a comparative study of interorganizational networks, or systems, of mental health delivery in four U.S. cities, leading to a preliminary theory of network effectiveness. Extensive data were collected from surveys, interviews, documents, and observations. Network effectiveness was assessed by collecting and aggregating data on outcomes from samples of clients, their families, and their case managers at each site. Results of analyses of both quantitative and qualitative data collected at the individual, organizational, and network levels of analysis showed that network effectiveness could be explained by various structural and contextual factors, specifically, network integration, external control, system stability, and environmental resource munificence. Based on the findings, we develop testable propositions to guide theory development and future research on network effectiveness.

Pugliesi, Karen. 1995. Work and Well-Being: Gender Differences in the Psychological Consequences of Employment. *Journal of Health and Social Behavior*. 36:57-71.

Differential exposure and vulnerability to social roles and role characteristics have been suggested as accounts for gender differences in well-being. This paper proposes a refinement of these models that incorporates the indirect effect of roles through intervening social and psychological resources. These reformulated models provide the framework for an analysis of gender differences in the psychological consequences of work that estimates the direct and indirect effects of two job conditions, control and complexity, on two dimensions of well-being. Results reveal

patterns of differential exposure, but also suggest some gender differences in the intervening variables through which work conditions influence well-being. These differences occur primarily in the proximate effects of self-esteem and social integration on distress and happiness.

Romney, A. Kimball, William H. Batchelder, and Tim Brazill. 1995. Scaling Semantic Domains. Chapter 15 in *Geometric Representations of Perceptual Phenomena: Papers in Honor of Tarow Indow's 70th Birthday*. Edited by Duncan Luce et al. New Jersey: Lawrence Erlbaum Associates. Pages 267-294.

The aim of this chapter is to present a method for scaling judged similarity judgments, among items in a semantic domain, from many subjects into a single representation. We present a single spatial representation that contains scaled information on where each of 125 subjects locates 21 animals. Data were collected from subjects using two formats, namely triadic comparisons and paired comparison ratings. The method serves three main purposes. First, it enables one to comprehend and examine very large data sets that would otherwise not be accessible in a single coherent view. Second, it allows one to describe and test comparisons among individuals and subgroups. Third, it provides an optimally aggregated representation that can be used to predict cognitive behaviors that relate to cognitive structure.

Sanil, Ashish, David Banks, and Kathleen Carley. 1995. Models for Evolving Fixed Node Networks: Model Fitting and Model Testing. *Social Networks*. 17:65-81.

Researchers in social networks are becoming increasingly interested in how networks evolve over time. There are theories that bear on the evolution of networks, but virtually no statistical methodology which supports the comparative evaluation of these theories. In this paper, we present explicit probability

models for networks that change over time, covering a range of simple but significant qualitative behavior. Maximum likelihood estimates of model parameters which describe the rate of change of the network are derived, and some of their sampling properties are elucidated. To calculate these estimates the researcher must have measurements upon the trajectory of a network - these are the values of the network at successive time points. We also describe goodness-of-fit tests for assessing model adequacy, and use Newcomb's data set to illustrate the methodology.

Shapin, Steven. 1995. Here and Everywhere: Sociology of Scientific Knowledge. *Annual Review of Sociology*. 21:289-321.

The sociology of scientific knowledge (SSK) is one of the profession's most marginal specialties, yet its objects of inquiry, its modes of inquiry, and certain of its findings have very substantial bearing upon the nature and scope of the sociological enterprise in general. While traditional sociology of knowledge asked how, and to what extent, "social factors" might influence the products of the mind, SSK sought to show that knowledge was constitutively social, and in so doing, it raised fundamental questions about taken-for-granted divisions between "social versus cognitive, or natural, factors." This piece traces the historical development of the sociology of scientific knowledge and its relations with sociology and cultural inquiry as a whole. It identifies dominant "localist" sensibilities in SSK and the consequent problem it now confronts of how scientific knowledge travels. Finally, it describes several strands of criticism of SSK that have emerged from among its own practitioners, noting the ways in which some criticisms can be seen as a revival of old aspirations toward privileged meta-languages.

South, Scott J. and Kim M. Lloyd. 1995. Spousal Alternatives and Marital Dissolution. *American Sociological Review*. 60:21-35.

Using three data sources we explore the effects of the quantity and quality of potential new marital partners available in local marriage markets on the risk of marital dissolution. Data from the National Survey of Families and Households demonstrate that, among recently-divorced men and women, a substantial percentage had been romantically involved with someone other than their spouse prior to divorcing. Merging microlevel data from the National Longitudinal Survey of Youth with aggregated Public Use Microdata from the 1980 U.S. Census, we examine the impact of marriage market characteristics and other contextual variables on the risk of marital dissolution, net of individual-level predictors. Proportional hazards models reveal that, among non-Hispanic Whites, the risk of dissolution is highest where either wives or husbands encounter an abundance of spousal alternatives. Increased labor force participation among unmarried women and high geographic mobility rates in the local area also increase marital instability. Our results suggest that many persons remain open to alternative relationships even while married, and that the supply of spousal alternatives in the local marriage market significantly increases the risk of marital dissolution.

Stein, Catherine H., Julian Rappaport and Edward Seidman. 1995. Assessing the Social Networks of People with Psychiatric Disability from Multiple Perspectives. *Community Mental Health Journal*. 31(4):351-370.

The study uses a sample of 97 new members of a mutual-help organization for the seriously mentally ill and 97 of their significant others (61 family members and 36 friends) to examine 1) the degree to which respondents' perceptions of dyadic relationships can be corroborated by network members and 2) the relationship of congruence of perception between respondent-network member pairs, characteristics of respondents' social networks and self-reported symptoms and social

Nevertheless, against the managerialist view that executives pursue their own objectives with little regard to the interests of owners, there is evidence of much more ownership constraint than has been recognized to date. Moreover, this constraint is growing.

Hummon, Norman P. and Thomas J. Fararo. 1995. Actors and Networks as Objects. *Social Networks* 17:1-26.

This paper explores the application of two contemporary computational methods to the development of sociological theory. Specifically, we combine the methods of object-orientation with discrete event simulation. This approach has several advantages for constructing and evaluating dynamic social theories.

In object-oriented program design, objects combine and integrate the traditional concepts of data structures and algorithms, the building blocks of structured programming. Algorithms associated with objects are called methods or member functions. Constructing social actors as objects involves defining both their data attributes and the methods associated with these attributes. We also treat a social network as a computational object. It has data types of nodes and ties. As an object, the network must also have methods that add and delete nodes and ties. Once a network exists, we can create other data types and methods that describe and analyze the network. For example, networks have in-degree and out-degree vectors, and measures of hierarchy. In principle, we can create attributes of networks for all of the structural measures we use to describe networks. We use actor and network objects in a discrete event simulation of a process of formation of dominance structures, exploring several dynamic variations of the underlying theoretical model.

Iannucci, Anita L. and A. Kimball Romney. 1994. Consensus in the Judgement of Personality Traits Among Friends and

Acquaintances. *Journal of Quantitative Anthropology*. 4:279-295.

This study examines the amount of knowledge people have about each other's personality traits. The personality characteristics investigated are: intelligence, assertiveness, likableness, and physical attractiveness. Rank-order data were collected from members of a college sorority. Each member ranked a subset of 20 well-known senior members on each characteristic. Consensus analysis (Romney, Weller, and Batchelder 1986; Romney, Batchelder, and Weller 1987) was used to produce the sorority's consensual answers as well as to estimate how much each subject knew about the overall ranking of the characteristic. The analysis revealed that the subjects shared judgements about the personalities of the twenty rankees. External validity measures for intelligence (grades and aptitude test scores) and physical attractiveness (rankings of photographs by strangers) validated the accuracy of the women's rankings. Rater accuracy was lowest with the newest sorority members who did not yet know the rankees well. Implications for trait psychology and the systematic distortion hypothesis are discussed.

Kenny, David A. 1995. The Effect of Non-independence on Significance Testing in Dyadic Research. *Personal Relationships*. 2:67-75.

Relationship researchers regularly gather data from both members of the dyad, and these two scores are likely to be correlated. This non-independence of observations can bias p values in significance testing if person is the unit in the statistical analysis. A method for determining how much bias results from dyadic interdependence is presented. Correction factors based on the degree of interdependence, design type, and the number of dyads are used to adjust the F statistic and its degrees of freedom to produce a corrected p value. Bias depends on the type of design

and the degree of nonindependence, while the number of dyads in the study ordinarily has only a small effect on bias. Various strategies for controlling for nonindependence are briefly reviewed.

Kupersmidt, Janis B., Melissa E. DeRosier and Charlotte P. Patterson. 1995. Similarity as the Basis for Children's Friendships: The Roles of Sociometric Status, Aggressive and Withdrawn Behavior, Academic Achievement and Demographic Characteristics. *Journal of Social and Personal Relationships*. 125(3):439-452.

The purpose of the present study was to examine similarity in demographic, behavioral, academic and social attributes as descriptors and predictors of children's friendships. The characteristics of all possible pairs of unique classroom dyads ($N = 4725$) were used to predict reciprocated school, home and best friendship choices among 554 third ($M = 9.38$ years old) and fourth ($M = 10.47$ years old) graders. Peer reports of aggressive and withdrawn behavior and socioeconomic status, teacher reports of poverty, and archival reports of sex, race and academic achievement were obtained. The main finding was that as similarity increased, the likelihood of being friends also increased. Specifically, patterns of gender, race, poverty, aggression, withdrawn behavior, achievement and sociometric status between dyad members were descriptive and predictive of children's friendships.

Lai, Gina. 1995. Work and Family Roles and Psychological Well-Being in Urban China. *Journal of Health and Social Behavior*. 36:11-37.

A theoretical framework that delineates the relationships between work and family roles and psychological well-being is derived from U.S. research and utilized to examine the relationships of work and family stress with psychological well-being in urban China. Data

from a sample of 733 married and employed individuals in urban Shanghai confirm the general model of the link between work and family stress and psychological distress. Due to the centrality of work roles for the Chinese, work stress exerts a stronger relationship on psychological well-being than does family stress. Furthermore, the Chinese are more vulnerable to stress arising from interpersonal conflicts than from role demands. In addition, gender differences are found in the relationship between role stress and distress. Women tend to experience more family demands than men. Women's mental health status is tied similarly to stress arising from work and family roles, whereas men are more vulnerable to work stress than family stress. However, Chinese women do not report significantly greater generalized distress than men.

Long, J. Scott. and Mary Frank Fox 1995. Scientific Careers: Universalism and Particularism. *Annual Review of Sociology*. 21:45-71.

Science is an institution with immense inequality in career attainments. Women and most minorities, as groups, have lower levels of participation, position, productivity, and recognition than do white men. Research in the sociology of science has focused on the degree to which different outcomes have resulted from universalistic and from particularistic processes. In this paper we 1) depict the career attainments of women and minorities in science, 2) consider the meaning and measurement of universalism compared to particularism, 3) analyze the causes of differential attainment with a view to assessing evidence for violations of universalism, 4) propose conditions under which particularism is likely to occur, and 5) consider methodological problems that affect this research.

Macy, Michael W. and Andreas Flache. 1995. Beyond Rationality in Models of Choice. *Annual Review of Sociology*. 21:73-91.

There is increasing sociological interest in formal models of action driven by a calculus of expected utility. We believe these efforts to extend microeconomic models to extraeconomic exchange can benefit from specification of societal constraints on individual choice. One type of constraint locates the actor in an evolving network of social ties that limit opportunities for exchange. Another approach assumes that choices are influenced by unintended outcomes that operate behind the backs of the actors. Considerable progress has been made in the past two years incorporating social structure and unintended consequences into formal models based on individual choice optimization. We critically examine leading contributions to network exchange theory (part 1) and evolutionary models of collective action (part 2), and assess how these and related developments may shape the future of rational choice theory and its place within sociology.

Manza, Jeff, Michael Hout, and Clem Brooks. 1995. Class Voting in Capitalist Democracies Since World War II: Dealignment, Realignment, or Trendless Fluctuation? *Annual Review of Sociology*. 21:137-162

Over the last two decades, many social scientists have argued that the stable class politics of industrial capitalism is giving way to newer types of social and attitudinal cleavages. Some scholars have gone further to associate what they see as significant declines in the anchorings provided by class with the rise of new political movements, parties, and even politicians standing for office completely outside traditional party systems. Advances in class theory and statistical methods coupled with the availability of high quality data have led others to reexamine the issue. They have suggested that these arguments reflect a misreading of the empirical evidence and/or

exaggerate the significance of these developments. We conclude that despite the absence of a clear consensus in the field, theories asserting a universal process of class dealignment are not supported.

Meyer, Ilan H. 1995. Minority Stress and Mental Health in Gay Men. *Journal of Health and Social Behavior*. 36:38-56.

This study describes stress as derived from minority status and explores its effect on psychological distress in gay men. The concept of minority stress is based on the premise that gay people in a heterosexist society are subjected to chronic stress related to their stigmatization. Minority stressors were conceptualized as: internalized homophobia, which relates to gay men's direction of societal negative attitudes toward the self; stigma, which relates to expectations of rejection and discrimination; and actual experiences of discrimination and violence. The mental health effects of the three minority stressors were tested in a community sample of 741 New York City gay men. The results supported minority stress hypotheses: each of the stressors had a significant independent association with a variety of mental health measures. Odds ratios suggested that men who had high levels of minority stress were twice to three times as likely to suffer also from high levels of distress.

Pampel, Fred C. and H. Elizabeth Peters. 1995. The Easterlin Effect. *Annual Review of Sociology*. 21:163-194.

The Easterlin effect posits cyclical changes in demographic and social behavior as the result of fluctuations in birth rates and cohort size during the post-World War II period. Large cohort size reduces the economic opportunities of its members and reduces income relative to smaller parental generations. Low relative economic status in turn leads to lower fertility, higher rates of female labor force participation, later

marriage, higher divorce and illegitimacy, and increasing homicide, suicide, and alienation. Cycles in birth rates and cohort size suggest that the small baby bust cohorts entering adulthood in the 1990s will enjoy higher relative income, more traditional family structures, and lower levels of social disorganization.

Of interest to economists and sociologists, the Easterlin effect has generated a large literature in the several decades since it was first proposed. Our review of the empirical studies notes the diversity of support across behaviors, time periods, and nations. Up to 1980, changes in wages, fertility, and social disorganization closely matched cohort size, but individual-level studies found little influence of relative income within cohorts. Further, the correspondence of the trends ends in the 1980s and appears in few countries other than the United States. Our review emphasizes both the contingent nature of the Easterlin effect and the way in which conditions have changed in recent decades to reduce the salience of cohort size for social and demographic behavior.

Pattison, Philippa and Stanley Wasserman. 1995. Constructing Algebraic Models for Local Social Networks Using Statistical Models. *Journal of Mathematical Psychology*. 39:57-72.

In this paper we discuss the construction and fitting of structural models for local, or ego-centered, social networks. We define partial algebraic structures from the collection of network paths having a focal individual as their source. Such structures are constrained in part by different methods of local network data collection. We present a statistical method for deriving algebraic representations from local network data. The method relies on a statistical strategy for evaluating algebraic relations and is sensitive to the various constraints associated with methods of data collection. The outcome of the method is a set

of partial algebras constructed from network paths with a fixed, maximum length.

Pescosolido, Bernice A. and Jennie J. Kronenfeld. 1995. Health, Illness, and Healing in an Uncertain Era: Challenges From and For Medical Sociology. *Journal of Health and Social Behavior*. Extra Issue:5-33.

The current situation in health care organizations, among providers and for people, dramatically challenges the "business as usual" roles of medicine, government, insurance companies, the community, and the university. Health care reform marks the first attempt in a century to consider a reconstruction of the social contract between society and medicine. While sociology stands as one of the earliest social sciences to systematically study the health care arena and create a health-focused subfield, there is a perception, not without support, of a desertion of identity from within, an encroachment by other areas from without, and abandonment by the parent discipline. We argue that these situations in medical arenas and in research fields require serious rethinking. The key lies in understanding how these phenomena are related to each other and to large social forces, and how they offer opportunities, rather than signal limitations, to medical sociologists. We turn to the theoretical tools of sociology to help unravel the complicated challenges that face both policy makers and researchers. After framing these issues in a sociology of knowledge perspective, we use the case of "utilization theory" to illustrate the connections between society and systems of care (as well as studies of them) and to create a future agenda. We end by raising three basic questions: (1) Why is a sociological perspective critical to the understanding of change and reform in health care? (2) Why is medical sociology critical to the survival of the general sociological enterprise? and (3) Why is general sociology critical to the research agenda in medical sociology?

Provan, Keith G. and H. Brinton Milward. 1995. *A Preliminary Theory of Inter-organizational Network Effectiveness: A Comparative Study of Four Community Mental Health Systems.* *Administrative Science Quarterly.* 40:1-33.

This paper presents the results of a comparative study of interorganizational networks, or systems, of mental health delivery in four U.S. cities, leading to a preliminary theory of network effectiveness. Extensive data were collected from surveys, interviews, documents, and observations. Network effectiveness was assessed by collecting and aggregating data on outcomes from samples of clients, their families, and their case managers at each site. Results of analyses of both quantitative and qualitative data collected at the individual, organizational, and network levels of analysis showed that network effectiveness could be explained by various structural and contextual factors, specifically, network integration, external control, system stability, and environmental resource munificence. Based on the findings, we develop testable propositions to guide theory development and future research on network effectiveness.

Pugliesi, Karen. 1995. *Work and Well-Being: Gender Differences in the Psychological Consequences of Employment.* *Journal of Health and Social Behavior.* 36:57-71.

Differential exposure and vulnerability to social roles and role characteristics have been suggested as accounts for gender differences in well-being. This paper proposes a refinement of these models that incorporates the indirect effect of roles through intervening social and psychological resources. These reformulated models provide the framework for an analysis of gender differences in the psychological consequences of work that estimates the direct and indirect effects of two job conditions, control and complexity, on two dimensions of well-being. Results reveal

patterns of differential exposure, but also suggest some gender differences in the intervening variables through which work conditions influence well-being. These differences occur primarily in the proximate effects of self-esteem and social integration on distress and happiness.

Romney, A. Kimball, William H. Batchelder, and Tim Brazill. 1995. *Scaling Semantic Domains. Chapter 15 in Geometric Representations of Perceptual Phenomena: Papers in Honor of Tarow Indow's 70th Birthday.* Edited by Duncan Luce *et al.* New Jersey: Lawrence Erlbaum Associates. Pages 267-294.

The aim of this chapter is to present a method for scaling judged similarity judgments, among items in a semantic domain, from many subjects into a single representation. We present a single spatial representation that contains scaled information on where each of 125 subjects locates 21 animals. Data were collected from subjects using two formats, namely triadic comparisons and paired comparison ratings. The method serves three main purposes. First, it enables one to comprehend and examine very large data sets that would otherwise not be accessible in a single coherent view. Second, it allows one to describe and test comparisons among individuals and subgroups. Third, it provides an optimally aggregated representation that can be used to predict cognitive behaviors that relate to cognitive structure.

Sanil, Ashish, David Banks, and Kathleen Carley. 1995. *Models for Evolving Fixed Node Networks: Model Fitting and Model Testing.* *Social Networks.* 17:65-81.

Researchers in social networks are becoming increasingly interested in how networks evolve over time. There are theories that bear on the evolution of networks, but virtually no statistical methodology which supports the comparative evaluation of these theories. In this paper, we present explicit probability

models for networks that change over time, covering a range of simple but significant qualitative behavior. Maximum likelihood estimates of model parameters which describe the rate of change of the network are derived, and some of their sampling properties are elucidated. To calculate these estimates the researcher must have measurements upon the trajectory of a network - these are the values of the network at successive time points. We also describe goodness-of-fit tests for assessing model adequacy, and use Newcomb's data set to illustrate the methodology.

Shapin, Steven. 1995. *Here and Everywhere: Sociology of Scientific Knowledge.* *Annual Review of Sociology.* 21:289-321.

The sociology of scientific knowledge (SSK) is one of the profession's most marginal specialties, yet its objects of inquiry, its modes of inquiry, and certain of its findings have very substantial bearing upon the nature and scope of the sociological enterprise in general. While traditional sociology of knowledge asked how, and to what extent, "social factors" might influence the products of the mind, SSK sought to show that knowledge was constitutively social, and in so doing, it raised fundamental questions about taken-for-granted divisions between "social versus cognitive, or natural, factors." This piece traces the historical development of the sociology of scientific knowledge and its relations with sociology and cultural inquiry as a whole. It identifies dominant "localist" sensibilities in SSK and the consequent problem it now confronts of how scientific knowledge travels. Finally, it describes several strands of criticism of SSK that have emerged from among its own practitioners, noting the ways in which some criticisms can be seen as a revival of old aspirations toward privileged meta-languages.

South, Scott J. and Kim M. Lloyd. 1995. *Spousal Alternatives and Marital Dissolution.* *American Sociological Review.* 60:21-35.

Using three data sources we explore the effects of the quantity and quality of potential new marital partners available in local marriage markets on the risk of marital dissolution. Data from the National Survey of Families and Households demonstrate that, among recently-divorced men and women, a substantial percentage had been romantically involved with someone other than their spouse prior to divorcing. Merging microlevel data from the National Longitudinal Survey of Youth with aggregated Public Use Microdata from the 1980 U.S. Census, we examine the impact of marriage market characteristics and other contextual variables on the risk of marital dissolution, net of individual-level predictors. Proportional hazards models reveal that, among non-Hispanic Whites, the risk of dissolution is highest where either wives or husbands encounter an abundance of spousal alternatives. Increased labor force participation among unmarried women and high geographic mobility rates in the local area also increase marital instability. Our results suggest that many persons remain open to alternative relationships even while married, and that the supply of spousal alternatives in the local marriage market significantly increases the risk of marital dissolution.

Stein, Catherine H., Julian Rappaport and Edward Seidman. 1995. *Assessing the Social Networks of People with Psychiatric Disability from Multiple Perspectives.* *Community Mental Health Journal.* 31(4):351-370.

The study uses a sample of 97 new members of a mutual-help organization for the seriously mentally ill and 97 of their significant others (61 family members and 36 friends) to examine 1) the degree to which respondents' perceptions of dyadic relationships can be corroborated by network members and 2) the relationship of congruence of perception between respondent-network member pairs, characteristics of respondents' social networks and self-reported symptoms and social

adjustment. Results showed strong variability in the degree to which respondents' perceptions were corroborated by network members, with a higher degree of corroboration for factual information such as face-to-face contact than for global aspects of dyadic relationships. Congruence of perception between respondents and family was associated with respondents' feelings of satisfaction about the quality of network ties and better psychological and social functioning. In contrast, congruence of perception between respondents and friends was related to a sense of involvement from ones network, but unrelated to respondents' mental health. The advantages of multiple perspectives data in studying the social ties of people with psychiatric disability are discussed.

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 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.

Talmud, Ilan. 1992. Market Power, Political Power, and State Support: The Case of Israeli

Industry. *Research in Politics and Society*. 4:35-62.

This paper examines the determinants of government support to Israeli industries, linking market power to political power. The analytical approach taken is largely based on the premise that industry is embedded in the social structure of market competition. Moreover, industry market strength is related to the level of control over its transactions and is a function of imperfect interindustrial competition for scarce resources. Network models of imperfect competition provide a precise operationalization of such an approach. Crucial also to the analysis is that industry's position is embedded in the political organization of the economy. Industry's political strength depends on its access to the political center. Direct access to the political core enables industry to mobilize resources for its benefit. In Israel, political ownership of economic organizations provides direct access to the political core. Following this logic and analyzing national accounts statistics, I show that industry's structural position and its degree of political ownership explain the level of direct subsidies granted to producers by the state. Implications for future research on social competition are discussed.

Thoits, Peggy A. 1995. Identity-Relevant Events and Psychological Symptoms: A Cautionary Tale. *Journal of Health and Social Behavior*. 36:72-82.

I examine the psychological impact of negative and positive events in roles that individuals view as salient or important for self-conception. Events in highly salient role-identity domains (identity-threatening and identity-enhancing events) should have greater effects on symptoms than those in less salient domains. Data come from interviews with a stratified two-wave panel sample of 532 married and divorced urban adults. Contrary to expectations, the influences of events on changes in psychological distress and

alcohol/drug use were not dependent on the importance of the role-identity to the individual. Exploratory qualitative analyses suggested several reasons why. I reformulate the identity-relevant stress hypothesis in light of these observations, and argue that contextual details about events are required to test the revised hypothesis adequately. The complex influences of stressors on perceptions of identity salience need further examination as well.

Thoits, Peggy A. 1995. Stress, Coping, and Social Support Processes: Where Are We? What Next? *Journal of Health and Social Behavior*. Extra Issue:53-79.

I review existing knowledge, unanswered questions, and new directions in research on stress, coping resource, coping strategies, and social support processes. New directions in research on stressors include examining the differing impacts of stress across a range of physical and mental health outcomes, the "carry-overs" of stress from one role domain or stage of life into another, the benefits derived from negative experiences, and the determinants of the meaning of stressors. Although a sense of personal control and perceived social support influence health and mental health both directly and as stress buffers, the theoretical mechanisms through which they do so still require elaboration and testing. New work suggests that coping flexibility and structural constraints on individuals' coping efforts may be important to pursue. Promising new directions in social support research include studies of the negative effects of social relationships and of support giving, mutual coping and support giving dynamics, optimal "matches" between individuals' needs and support received, and properties of groups which can provide a sense of social support. Qualitative comparative analysis, optimal matching analysis, and event-structure analysis are new techniques which may help advance research in these broad topic areas. To enhance the

effectiveness of coping and social support interventions, intervening mechanisms need to be better understood. Nevertheless, the policy implications of stress research are clear and are important given current interest in health care reform in the United States.

van Meter, Karl M., William A. Turner and Jean-Baptiste Bizard. 1995. Cognitive Mapping of AIDS Research 1980-1990: Strategic Diagrams, Evolution of the Discipline and Data Base Navigation Tools. *Bulletin de Méthodologie Sociologique*. 46:30-44.

Les deux auteurs ont utilisé les logiciels LEXINET et LEXIMAPPE (cartes cognitives et analyses scientométriques) et déjà présenté un diagramme stratégique basé sur les analyses des 290 derniers articles de recherche (parus en 1989, et 1990 en partie) sur le SIDA réunis dans la base de données de Sociological Abstracts qui couvre les années 1980-1990 (K.M. van Meter, W. A. Turner, *Current Sociology*, 1992, 40, 8 129-134). Ici, ils réanalysent les mêmes données et présentent deux autres diagrammes stratégiques sur la période 1980-1986 et 1987-1988. Ces diagrammes stratégiques, chacun avec quatre quadrants correspondant à des recherches en termes de "courant principal", "tour d'ivoire", "plein d'avenir", "prendre le train en marche" leur permettent de décrire la naissance et le développement d'une discipline scientifique, d'analyser l'évolution de sa structure et de son contenu dans le temps et les amènent à formuler des hypothèses sur l'innovation scientifique, les trajectoires ou itinéraires des chercheurs dans cette nouvelle discipline.

Using the LEXINET and LEXIMAPPE computer programs for cognitive mapping and scientometric analysis, two of the authors have previously published a strategic diagram based on the analysis of the 290 last research articles (all of 1989 and part of 1990) on AIDS in the Sociological Abstracts database covering 1980 to 1990 (K. M. van Meter and W. A. Turner, *Current Sociology*, 1992, 40, 3, 123-134).

Here we present a re-analysis of the same data and two other strategic diagrams concerning this AIDS research data base, respectively covering the periods 1960-1986 and 1987-1988. These strategic diagrams, each with its four quadrants corresponding to "Main Stream", "Ivory Tower", "Up-and-Coming" and "Bandwagon" research, permit us to describe the birth and development of a scientific discipline, analyze the evolution of its structure and content over time, and set forth certain hypotheses concerning scientific innovation and itineraries or trajectories of researchers in a new discipline.

Walker, Karen. 1995. "Always There For Me": Friendship Patterns and Expectations Among Middle- and Working-Class Men and Women. *Sociological Forum*. 10(2):273-296.

Using data from semistructured qualitative interviews with 52 working- and middle-class women and men, this paper compares differences in both friendship patterns and expectations of friendship. Working-class respondents' friendships revealed a high degree of reciprocity and interdependence with respect to material goods and services. Norms of working-class friendship emphasized being able to rely on friends for such services. Middle-class respondents, in contrast, celebrated shared leisure and the existence of large networks of interesting friends. Middle-class friendships enhanced the individuality that characterizes contemporary middle-class life. As a result of class differences in the meanings and expectations of friendship, the potential strains and conflicts differed. Working-class respondents reported far more open conflict with friends over the exchange of services than did middle-class respondents. Middle-class respondents reported difficulties in asking friends for help, even though being able to do so was a widely shared ideal of friendship.

Waters, Mary C. and Karl Eschbach. 1995. *Immigration and Ethnic and Racial*

***Inequality in the United States. Annual Review of Sociology*. 21:419-446.**

This review examines research about current levels and recent changes in ethnic and racial stratification in the United States. Research about ethnic inequality emphasizes that economic stagnation and restructuring are troubling impediments to progress toward equality, and it shows evidence that employers may still use racial and ethnic queues in hiring. A number of issues arise with respect to the incorporation of the new waves of immigrants who have arrived since immigration law reform in 1965. We discuss patterns of adaptation of new immigrants, including available evidence on the ethnic enclave economy and substitution in the labor market of immigrants for native minorities. We summarize new theories and hypotheses about the fate of the children of recent immigrants, and we point to topics in this area needing further research.

Wharton, Amy S. and Rebecca J. Erickson. 1995. *The Consequences of Caring: Exploring the Links Between Women's Job and Family Emotion Work. The Sociological Quarterly*. 36(2):273-296.

Sociologists of emotion have examined the ways that workers are required to manage their emotions on the job, while studies of family emotion work reveal the effort involved in providing emotional support at home. Analyzing data collected from married or cohabiting women hospital workers, we examine the relations between women's job-related well-being. Consistent with "scarcity" views of women's emotional energy, we find that performance of family emotion work has negative consequences for women's job-related well-being. Consistent with "expansion" perspectives, however, women who perform some emotional labor on the job are more likely than other women to perform family emotion work. Our findings support a view that incorporates elements of both

scarcity and expansion perspectives. We conclude that the job-related well-being of women hospital workers is less influenced by performance of emotional labor at work that it is by women's and their partners' involvement in family emotion work.

Winstead, Barbara A., Valerian J. Derlega, Melinda J. Montgomery, and Constance Pilkington. 1995. *The Quality of Friendships at Work and Job Satisfaction. Journal of Social and Personal Relationships*. 12(2):199-215.

The study examines the relationships between quality of a friendship at work and job satisfaction. Faculty and staff (N = 722) at two universities completed measures of the qualities of their best friendships at work and of job satisfaction. Multiple regressions for faculty and staff and for subjects whose best friend was a peer, supervisor or subordinate revealed that the quality of one's best friendship in the workplace is predictive of job satisfaction. A negative aspect of friendship, maintenance difficulty, was related to lower satisfaction for staff (but not faculty) and for workers whose best friend at work was a peer or supervisor. Wishing to spend free time with a best friend at work (voluntary interdependence) and an exchange orientation toward the friend were also negatively related to aspects of job satisfaction. The relationships between feelings about one's best friend at work and feelings about one's job are discussed.

Yair, Gad. 1995. 'Unite Unite Europe' The Political and Cultural Structures of Europe as Reflected in the Eurovision Song Contest. *Social Networks*. 17:147-161.

This study focuses on the voting matrix of the yearly song festival, the Eurovision Song Contest. It analyzes the cohesive bonds among the participating nations and studies the positional equivalencies in taste. The cohesion

of each Bloc is based on different sentiments and interests. The Western Bloc can be viewed as a coalition based on historical and political interests. The Northern Bloc draws its solidarity from common cultural and primordial lingual codes (i.e. German). The diffuse Mediterranean Bloc probably achieves its unstable alliance from common cultural experiences. In contrast, the structural equivalence analysis - which focuses on taste as revealed by similar patterns of voting - portrays a more diffuse structure, interpreted as 'islands of taste'; these are dispersed in line with cultural and lingual cleavages. The implications of these findings are discussed.

Zeggelink, Evelien. 1995. *Evolving Friendship Networks: An Individual-Oriented Approach Implementing Similarity. Social Networks*. 17:83-110.

The article is an extension to Zeggelink (1984) which introduced the individual-oriented approach to model the evolution of networks. In this approach, the dynamics of friendship network structure are considered as a result of individual choices with regard to friendship relationships. Individuals have specific characteristics and behavioral rules. The previous model was based solely on individuals' different needs for social contact. In the model presented here, we introduce another important determinant of friendship formation: preferences for similar friends. The amount of heterogeneity of the distribution of individual characteristics on which this similarity is based thus becomes important. In contrast to most existing dynamic social network models, this aspect of heterogeneity, as well as dependence of dyads, can be easily dealt with. We examine how individual characteristics and preferences (individual attributes at the micro level) with respect to prospective friendship relations interact and aggregate to outcomes at the macro level: the network structure.

Books

Arachchige-Don, Neville S. 1994. *Patterns of Community Structure in Colombo, Sri Lanka: An Investigation of Contemporary Urban Life in South Asia.* Lanham, MD: University Press of America.

This study examines the network of relationships of a community in Colombo City, Sri Lanka, within which the people adopt their behavior in five arenas of activity: politics, kinship, ethnicity and religion, neighborhood involvement and mobility. These provide the keys for understanding urban life in South Asia.

Contents: Introduction; Growth of the Capital City and the Socio-Economic Setting of the Community; Resource Structure of the Community; Migration and Kinship; The Neighborhood Relationship; Political Behavior; Community Conflicts and Politics; Religion and Politics: Behavioral Manifestations; Patterns of Mobility and Community Integration; Conclusion.

Batty, Michael and Paul Longley. 1994. *Fractal Cities: A Geometry of Form and Function.* San Diego: Academic Press.

Fractal Cities is a study of the development and use of fractal geometry for understanding and planning the physical form of cities, showing how this geometry enables cities to be simulated through computer graphics. It shows how cities evolve and grow in ways that at first sight appear irregular, but which, when understood in terms of fractals, illustrate an underlying order that reveals their complexity and diversity.

The book contains sixteen pages of computer graphics and explanations of how to construct them as well as new insights into the

complexity of social systems. The authors provide an intelligible and gentle introduction to fractal geometry as well as an exciting visual understanding of the form of cities, thus providing one of the best introductions to fractal geometry available for non-mathematicians and social scientists.

Fractal Cities can be used as a text for courses on geographic information systems, urban geography, regional science and fractal geometry. Planners and architects will also find that there are many aspects of fractal geometry in this book relevant to their own interests. Furthermore, those involved in fractals and chaos, computer graphics and systems theory will find important methods and examples which are germane to their work.

Bloor, Michael. 1995. *A Sociology of HIV Transmission.* Thousand Oaks, CA: Sage Publications.

In this authoritative study, Michael Bloor provides a lucid overview of the vital contribution sociology has and is making in the study of HIV transmission. He examines the epidemiology of the HIV epidemic in its different manifestations in the developing world and in the West, looking at sex tourism, prostitution, intravenous drug users, hemophiliacs and transfusion recipients, and heterosexual and homosexual transmission. Bloor goes on to look at reports of sociological studies of risk behavior with men who have sex with men, syringe sharing, and risk behavior in heterosexual males and females. These studies are then used to critically examine the different theoretical models of risk behavior and consider their implications for disease prevention.

Contents: 1. Introduction. 2. The Epidemic of HIV Infection in the Developing World. 3. The Epidemic of HIV Infection in the West. 4. Sociological Studies of Risk Behavior. 5. Theories of Risk Behavior. Conclusion.

Böröcz, József and David A. Smith, editors. 1995. *A New World Order?: Global Transformations in the Late Twentieth Century.* Westport, CT: Praeger Publishers.

The closing years of the 20th century will be remembered as a time of tumultuous change. The various essays are attempts to understand the changes and ground them in the context of the logic of the contemporary world-system. The essays are divided into two main themes: structural transformations and regional ramifications of global transformations. East Asia, the Pacific Rim, European periphery, and the Middle East are all examined to determine if fundamental changes are occurring. Scholars and upper level and graduate students of economic history, developmental economics, regional economics, international economics, and political economy will find provocative contrasts and insights in this collection of essays, presented at the 18th annual Political Economy of the World-System Conference.

Bourgeois, Philippe. 1995. *In Search of Respect: Selling Crack in El Barrio.* New York: Cambridge University Press.

Philippe Bourgeois, an anthropologist, spent five years living among crack dealers in East Harlem, one of the roughest and most famous ghetto neighborhoods in the United States. He built deep, long-term friendships with street-level drug dealers and observed, tape-recorded, and photographed every facet of their lives. *In Search of Respect* conveys the brutal poetry of street language as these residents of the barrio struggle with poverty, social marginalization, and substance abuse. It documents the full range of human emotion and experience on the street - from genuine attempts to work legally and foster supportive

families to the cruelty of domestic violence, adolescent gang rape, and incarceration. Bourgeois argues that a cultural struggle for respect has led some residents of "El Barrio" away from the legal job market and into a downward spiral of crime and poverty. Far from operating in an irrational nether-world of society, the people Bourgeois interviewed have been attracted to the multi-billion-dollar drug economy because they deeply believe in the "American Dream."

Brown, Courtney. 1995. *Chaos and Catastrophe Theory: Nonlinear Modeling in the Social Sciences.* Newberry Park: Sage Publications.

What is chaos? How can it be measured? How are the models estimated? What is catastrophe? How is it modeled? How are the models estimated? These questions are the focus of this volume.

Following an explanation of the differences between deterministic and probabilistic models, Courtney Brown introduces the reader to chaotic dynamics. Other topics covered are finding settings in which chaos can be measured, estimating chaos using nonlinear least squares and specifying catastrophe models. Finally, a nonlinear system of equations that models catastrophe using real survey data is estimated.

Bundy, Barbara K., Stephen D. Burns and Kimberly V. Weichel, editors. 1995. *The Future of the Pacific Rim: Scenarios for Regional Cooperation.* Westport, CT: Praeger Publishers.

This volume examines the vast potential of - and critical need for - cooperation among the neighboring states of the Pacific Rim. From economic and security matters to cultural and environmental concerns, the "Pacific Century" will require increased cross-border education, communication, and cooperation, which can be enhanced by regional organizations and

agreements. This work offers a compilation of new thinking from international political, business, and academic leaders on the challenges facing the Pacific Rim in the next century, and proposes the emerging Pacific community as a model for global cooperation.

Chemers, Martin M., Stuart Oskamp, and Mark A. Costanzo. 1995. *Diversity in Organizations*. Thousand Oaks, CA: Sage Publications.

Signaling the changing demography of the workforce, the largest percentage of new workers in the coming decades will be individuals sometimes labeled as "nontraditional" employees. This new diversity presents both challenges and opportunities to individuals and to the organizations of which they are a part. The editors of *Diversity in Organizations* gather forces to work out the difficulties generated by diversity and reap the rewards. Applying varied perspectives and approaches — such as analysis of individual psychology, dyadic interactions, small group dynamics, and organizational outcomes — the contributors provide scholarly coverage of a topic that is both contemporary and foresightful.

Abridged Contents: 1. Individual Reactions to Diversity. 2. Diversity Effects on Groups and Teams. 3. Organizational Perspectives on Diversity.

Cicirelli, Victor G. 1995. *Sibling Relationships Across the Life Span*. New York: Plenum Publishing.

This volume examines the course of the sibling relationship from childhood to the end of life. The author outlines factors which influence the sibling relationship, considering the sibling dyad alone, as well as in relations to a larger kinship. He provides information gleaned from studies of stepsiblings wherever possible. Chapters offer coverage of a broad theoretical framework for sibling research,

methodological problems confronting the sibling researcher, research on the sibling relationship in childhood and adolescence, and in adulthood and old age, cross-cultural evidence for the universality of the sibling relationship, a hermeneutic study of the relationships of a single large family of adult siblings, sibling helping relationships, and special aspects of sibling relationships.

Corn, Granino. A. 1995. *Neural Networks and Fuzzy-Logic Control on Personal Computers and Workstations*. Boston: MIT Press.

Most neural-network programs for personal computers and engineering workstations simply control a fixed set of canned network-layer algorithms with pulldown menus. This hands-on tutorial demonstrates both neural networks and fuzzy-logic control with a different approach. A natural, computer-readable notation for matrix operations and differential equations lets users create their own neural networks and fuzzy-logic controllers on the screen; real simulation experiments then execute immediately.

Neural Networks and Fuzzy-Logic Control introduces a simple integrated environment for programming displays and report generation. It includes the only currently available software that permits combined simulation of multiple neural networks, fuzzy logic controllers, and dynamic systems such as robots or physiological models. The enclosed educational version of DESIRE/NEUNET differs for the full system mainly in the size of its data area and includes two screen editors, compiler, color graphics, and many ready-to-run examples. The software lets users or instructors add their own help screens and interactive menus.

Differential equations in scalar and/or matrix form are entered in ordinary mathematical notation. Users can program new neural networks or fuzzy logic applications without learning C or LISP. For truly interactive

experimentation, the extra-fast compilation is unnoticeable, and simulation speed still compares well with that of special accessory processors. The 123 figures include block diagrams, simulation-output graphs produced on personal computers and engineering workstations and many complete computer programs.

The version of DESIRE/NEUNET included here is for PCS, viz. 2861287, 3861387, 486DX, Pentium, P6, SX with math coprocessor.

Diani, Mario. 1995. *Green Networks: A Structural Analysis of the Italian Environmental Movement*. Edinburgh: Edinburgh University Press.

This book analyzes the Italian environmental movement, as it developed in the 1980s, from a social network perspective. Rather than as mere constraints/facilitators for collective behavior, movement networks are conceived here as both the outcome of movement actors' choices, and a constraint on their subsequent course of action. Network data are analyzed, regarding 42 organizations and 197 core activists in 1985, and 37 organizations and 95 core activists in 1990. Attention is mostly paid to two different types of connections: "inter-organizational ties" (including jointly launched campaigns and regular exchanges of information) and "activist-mediated (potential) ties" (namely, connections between movement organizations made possible by overlapping memberships, or friendship ties between core activists). In order to identify the logic lying behind the actors' choices which make up the movement structure, the book draws heavily upon resource mobilization, new social movements, and political process theories.

I. Networks of environmental action (1. Environmental conflicts in Italy; 2. A framework for analysis) II. Environmental mobilisations in Italy 1960-1990 (1. The origins; 2. 1968 and afterwards; 3. From Seveso to Montalto di Castro; 4. Social and political

change in Italy; 5. The ecology movement in the 1980s) III. The ecology movement in Milan (1. The local dimension of environmental politics; 2. Groups and organizations; 3. Activists) IV. Individual participation in the movement (1. Socialization processes; 2. Recruitment networks; 3. Framing the environment; 4. Participation within the movement) V. Movement networks (1. Linkages; 2. Densities; 3. Centrality; 4. The visible network; 5. The latent structure; 6. Ties to non-environmental organizations and institutions) VI. Stability and change (1. The synchronic view: the movement network in Rome; 2. The diacronic view: movement networks in Milan 1985-1990; 3. The diacronic view: movement activists in Milan 1985-1990) VII. Movement networks in the aftermath of protest cycles (1. Persistence and innovation from the 1970s; 2. Movement subcultures; 3. Coping with diversity; 4. Consensus vs conflict movements; 5. Conclusion)

Duck, Steve and Julia T. Wood. 1995. *Confronting Relationship Challenges*. Thousand Oaks: Sage Publications.

Addressing the difficult side of relationships, *Confronting Relationship Challenges* moves forward in the *Understanding Relationship Processes Series* by taking an honest look at what can go wrong with relationships and highlighting some of the challenges partners might face while struggling to comprehend their connectedness to one another. Relationship challenges examined in this book include conflict, enemies, the reconfiguring post-divorce "family", codependency, interpersonal violence, HIV/AIDS, chronic illness, and managing grief after a partner's death.

Farrell, Betty G. 1993. *Elite Families: Class and Power in Nineteenth-Century Boston*. Albany: State University of New York Press.

This book maps the development of a regional elite and its persistence as an economic upper class through the nineteenth century. Farrell's

study traces the kinship networks and overlapping business ties of the most economically prominent Brahmin families from the beginning of industrialization in the 1820s to the early twentieth century. Archival sources such as genealogies, family papers, and business records are used to address two issues of concern to those who study social stratification and the structure of power in industrializing societies: in what ways have traditional forms of social organization, such as kinship, been responsive to the social and economic changes brought by industrialization; and how active a role did an early economic elite play in shaping the direction of social change and in preserving its own group power and privilege over time.

Contents: Family and Economy; The Setting of Brahmin Boston; Kinship Networks and Economic Alliances; Kin-keeping and Marriage Ties: The Domestic Side of Kinship Networks; Patterns of Economic Continuity; Kinship and Class: Into the Twentieth Century.

Fletcher, Garth and Julie Fitness, editors. 1995. *Knowledge Structures in Close Relationships: A Social Psychological Approach*. Mahwah, NJ: Lawrence Erlbaum Associates.

Thirty-three of the top scholars in this fast moving domain present a picture of work at the cusp in social psychology -- work that deals with cognition and affect in close relationships. The present volume contains a wealth of research findings and influential theoretical accounts that spring as much from indigenous work in the close relationship field as from purebred social cognition. The chapters introduce theories and research programs concerned with the role of individual and couple differences in close relationship knowledge structures. They deal with the role of emotion and affect in close relationships. And they discuss the function of cognition and knowledge structures in relation

to the developmental course of close relationships. Each section is accompanied by a critical review written by an expert in the field.

Contents: Preface, by G. Fletcher and J. Fitness; Introduction. Part 1: Knowledge Structures and Individual/Couple Differences, by G. Fletcher and G. Thomas; Lay Close Relationship Theories: Their Structure and Function, by P. Shaver, N. Collins and C. Clark; Attachment Styles and Internal Working Models of Self and Relationship Partners, by C. Rusbult, N. Yovetich, J. Verette; An Interdependence Analysis of Accommodation Processes, by S. Murray and J. Holmes; The Construction of Relationship Realities, by J. Simpson, S. Gangestad, and C. Nations; Sociosexuality and Relationship Initiation: An Ethological Perspective of Nonverbal Behavior, by L. Acitell and A. Young; Gender and Thought in Relationships. Discussant Chapter Part 1. H. Reis and R. Knee; What We Know, What We Don't Know, and What We Ought to Know about Close Relationships. Part 2: Knowledge Structures and Emotions, by J. Fitness; Emotion Knowledge Structures in Close Relationships by B. Fehr and M. Baldwin; Prototype and Script Analyses of Laypeople's Knowledge of Anger, by P. Clark, S. Pataki, V. Carver; Self Presentation of Emotions in Relationships. Discussant Chapter: Part 2, by J. Forgas; The Role of Emotion Scripts and Transient Moods in Relationships: Structural and Functional Perspectives. Part 3: Knowledge Structures and Relationship Development, by S. Planalp and M. Rivers; Changes in Knowledge of Personal Relationships, by A. Aron and E. Aron; Self and Self-Expansion in Relationships, by D. Holmberg and J. Veroff; Rewriting Relationship Memories: The Effects of Courtship and Wedding Scripts, by J. Vorauer and M. Ross; The Pursuit of Knowledge in Close Relationships: An Informational Goals Perspective. Discussant Chapter: Part 3 by C. Surra; Knowledge Structures in Developing Relationships: Progress and Pitfalls.

Friedman, Jonathan. 1995. *Cultural Identity and Global Process*. Thousand Oaks, CA: Sage Publications.

Drawing on ideas ranging from world systems theory to postmodernism, *Cultural Identity and Global Process* analyzes the relations between the global and the local to show how cultural fragmentation and modernist homogenization are equally constitutive trends of global reality. Illustrating his thesis with examples from a variety of theoretical sources, ethnographic accounts, and historical eras, Friedman considers elements as disparate as the cultural formations of ancient Greece, contemporary processes of Hawaiian cultural identification, and the Congolese internalization of modernity evidenced in beauty cults. Throughout his work, he examines the interdependency of the world market and local cultural transformations, demonstrating the complex interrelations between globally structured social processes and the organization of identity.

Contents: 1. Towards a Global Anthropology. 2. General Historical and Culturally Specific Properties of Global Systems. 3. Civilizational Cycles and the History of Primitivism. 4. The Emergence of the Culture Concept in Anthropology. 5. Culture, Identity, and World Process. 6. Cultural Logics of the Global System. 7. Globalization and Localization. 8. History and the Politics of Identity. 9. The Political Economy of Elegance. 10. Narcissism, Roots, and Postmodernity. 11. Global System, Globalization, and the Parameters of Modernity. 12. Order and Disorder in Global Systems.

Gardner, Katy. 1995. *Global Migration, Local Lives: Travel and Transformation in Rural Bangladesh*. London: Oxford University Press.

Gardner looks at the 'sending' communities and covers major aspects of Bangladeshi life

(land, family structure, marriage, and religion) to show how out-migration has become a central economic and social resource - the route to social, as well as physical, mobility, transforming those who gain access to it.

Gilbert, Nigel and Jim Doran, editors. 1994. *Simulating Societies: The Computer Simulation of Social Phenomena*. Bristol, PA: UCL Press.

This book explores the contribution that computer-based modeling and artificial intelligence can make to understanding fundamental issues in social science. The authors show how computer simulations can help to clarify theoretical approaches, contribute to the evaluation of alternative theories, and illuminate one of the major issues of the social sciences: how social phenomena can "emerge" from individual action.

Gilbert, Nigel and Rosaria Conte, editors. 1995. *Artificial Societies: The Computer Simulation of Social Life*. Bristol, PA: UCL Press.

Simulation has been adopted as a research technique in many areas of science and, as this book shows, it is now making a significant impact on social science. The companion text to *Simulating Societies*, this book demonstrates the latest practice of using computer simulation to develop ideas and theories in a range of social science disciplines. It also explores computational agents whose properties can be investigated. For the first time, researchers can carry out social experiments under laboratory conditions, trying out different configurations and observing the consequences. This book will be of considerable interest to social scientists intrigued by the possibilities of a new way of studying societies and to computer scientists interested in new applications of distributed artificial intelligence.

Gould, Roger V. 1995. *Insurgent Identities: Class, Community, and Protest in Paris from 1848 to the Commune*. Chicago: University of Chicago Press.

In this contribution both to the sociology of social movements and to French social history, Roger Gould goes beyond previous accounts that portray the Paris Commune of 1871 as a continuation of the class struggles of the 1848 Revolution. By focusing on the years between these two upheavals, Gould reveals that while class played a pivotal role in 1848, neighborhood solidarity was a decisive organizing force in 1871.

Baron Haussmann's massive urban renovation projects between 1852 and 1868 dispersed workers from Paris' center to newly annexed districts on the outskirts of the city. Residence rather than occupation quickly became the new basis of social solidarity. Drawing on evidence derived from trial documents, marriage certificates, reports of police spies, and the popular press, Gould demonstrates that this fundamental rearrangement in the patterns of social life made possible a neighborhood insurgent movement; whereas the insurgents of 1848 fought and died in defense of their status as workers, those of 1871 did so as members of a besieged urban community.

Granovetter, Mark. 1995. *Getting a Job: A Study of Contacts and Careers*. Chicago: University of Chicago Press

Granovetter's classic study of how 282 men in Newton, Massachusetts, found their jobs was one of the first to demonstrate the ways in which social activity influences labor markets. It pointed the way to networking as the crucial link between economists' studies of labor mobility and more focused studies of an individual's motivation to find work.

In this Second Edition, Granovetter reviews twenty years' work in the field and shows how

his findings have been supported and developed by studies in Japan, England, and the United States. He explores issues of inequality, suggesting "what empirical and theoretical agenda would most enrich our understanding of how people and jobs connect." This edition also includes his influential article "Economic Action and Social Structure: The Problem of Embeddedness."

Contents: Part One: Toward Causal Models: 1. "Job Search" and Economic Theory; 2. Contacts and Their Information; 3. The Dynamics of Information Flow; 4. The Dynamics of Vacancy Structure; 5. Contacts: Acquisition and Maintenance; 6. Career Structure; 7. Some Theoretical Implications; Part Two: Mobility and Society: 8. Mobility and Organizations; 9. Comparative Perspectives; 10. Applications; Afterword 1994: Reconsiderations and a New Agenda: A. Design and Conduct of the Study; B. Coding Rules and Problems; C. Letters and Interview Schedules; D. Economic Action and Social Structure: The Problem of Embeddedness.

Griffiths, Vivienne. 1995. *Adolescent Girls and their Families: A Feminist Ethnography*. Brookfield, VT: Avebury Publishers.

This book provides a detailed account of friendship between adolescent girls, based on a long-term ethnographic study. Using participant observation and interviewing, young women's own perceptions and experiences of friendship are explored. Whilst taking account of the negative cultural construct of relationships between girls, a view often reflected in research, this book offers an alternative view, stressing the importance of closeness of young women's friendships as they cope with growing up. A detailed analysis of quarrels between girls demonstrates that they are often a mark of closeness and intense emotions, rather than an indication of shallow friendships, as popular stereotypes suggest. Strategies by which young women counter constraints on their

lives are demonstrated both in and out of school. Finally, the study shows the continuity of relationships, and highlights the resistance young women make to the break up of their friendships.

Guastello, Stephen J. 1995. *Chaos, Catastrophe, and Human Affairs: Applications of Nonlinear Dynamics to Work, Organizations and Social Evolution*. Mahwah, NJ: Lawrence Erlbaum Associates.

Whether we are talking about steering a wheelbarrow over rugged terrain or plotting the course of international relations, human performance systems involve change. Sometimes changes are subtle or evolutionary, sometimes they are catastrophic or revolutionary, and sometimes the change is from periods of relative calm to period of vibrant oscillations to periods of chaos. As a general rule, more complex systems are likely to produce more complex forms of change.

Although social scientists have long acknowledged that change occurs and have thought of ways to effect desirable change, the dynamical processes of change have been poorly understood in the past. This book combines recent advances in mathematics and experimental design with the best available social science theories to produce a new, integrated, and compact theory of work, organizations, and social evolution. The domain of applications spans from human decision making processes to personnel selection and work motivation, work performance under conditions of stress, accident and health risk analysis, the development of social institutions and economic systems, creativity and innovation, organizational development and group dynamics, and political revolutions and war.

1. An Invitation to Chaos 2. Principles of Chaos and Catastrophe 3. Metaphors, Easter Bunnies, Modeling, Verification 4. Nds, Human Decision-making, and Cognitive

Processes 5. Dynamics of Motivation and Conflict 6. Stress and Human Performance 7. Accidents and Risk Analysis 8. Stress-related Illness 9. Evolution of Human Systems 10. Innovation, Creativity, and Complexity 11. The Dynamical Nature of Organizational Development 12. Chaos, Revolution and War

Gulliver, Philip H. and Marilyn Silverman. 1995. *Merchants and Shopkeepers: A Historical Anthropology of an Irish Market Town, 1200-1991*. Toronto: University of Toronto Press.

Thomastown, in southeast Ireland, has been a site of commerce for nearly eight hundred years. As a centre within regional, national, and international networks of trade, it is a gateway locality that provides an ideal setting for this historical anthropology of commerce and retailing.

Much of this study's impact comes from its focus through time. Gulliver and Silverman explore Thomastown's lengthy history of commerce, placing special emphasis on merchants and shopkeeping during the last two hundred years. Investigating areas that have received little attention in anthropological literature - commercial agents, trading networks, and accumulation through market exchange - the authors are able to elucidate the entrepreneurial strategies of shopkeepers and the persistence or decline of family businesses. They also bring new ideas and information to a number of contemporary theoretical debates: dependency models, ideas of modernization, theories of class structure, concepts of family reproduction and entrepreneurship, and the socio-economics of small businesses.

This exploration of three interdependent histories (town, commerce, and retailing) over a very long duration, makes a strong case for the inclusion of historical analysis in the field of anthropological ethnography. The work stands virtually alone as an intensive social-

historical analysis of merchants and shopkeeping in Western Europe, and provides a valuable theoretical and methodological tool for the study of anthropology.

Contents: 1. Shopkeeping, Commerce, and the Town: Time, Space, and Concept; Part One: Structuring a 'Small Market and Post Town,' 1200-1840; 2. Ethnicity and Status-Class: The Conquest and the 'Bodie Politicke,' 1649-1727; 3. Regional Domination and Economic Malaise, 1693-1750; 4. Economic Expansion, Retailing, and Entrepreneurship, 1750-1815; 5. The Uneven Economy in a Small Market and Post Town, 1815-1835; 6. Status-Class, Locality, and Sect: The Politics of Domination, 1800-1846; Part Two: 'We Are the Town': Commerce, Retailing, and the Town, from the Early 1840s to the Early 1900s; 7. A Gateway Locality, 1840-1983: Spatial and Conceptual Dimensions; 8. The Political Economy of Contemporary Thomastown, 1840-1991; 9. Thomastown's Retailers after 1840: Status-Class and Kinship; 10. The Idea of Family and Family Business; 11. The Continuity and Discontinuity of Retail Businesses after 1840; 12. Case Histories: Continuity and the Dynamics of Retailing, 1797-1989; 13. Becoming a Retailer, 1824-1991; 14. Entrepreneurial Strategies and Multiple Enterprises; 15. Beyond the Shop: Political Quiescence and Protest, 1840-1922; 16. 'We Are the Town': Irish Hegemony and Local Identity after 1922; Part Three: Conclusions: 17. General Processes and Comparative Analyses; Appendix One: Thomastown's Sovereigns, 1692-1841; Appendix Two: A Methodological Note on Studying Retailing and Retailers.

Hahlo, Ken. 1995. *Communities, Networks and Ethnic Politics: The Leaders and the Led.* Brookfield, VT: Avebury Publishers.

Ken Hahlo's theme is that by shifting social identities in an informal political arena, Gujarati leaders can detach or unite with leaders of other ethnic communities to form structures of support. The source of social

identities lies in the social and religious affiliations which Gujaratis brought to Britain. Underlying these communities is a structure of social networks which separates like from unlike. These social identities form a hierarchy which can be politically manipulated to reduce or widen support.

Hüttner, Harry J. M. and Pieter van den Eeden. 1995. *The Multilevel Design: A Guide with an Annotated Bibliography, 1980-1993.* Westport, CT: Greenwood Press.

In the social sciences, phenomena tend to be hierarchically structured, so that individuals belong to groups, and groups belong to larger organizations and societies. Multilevel research stresses this hierarchical structure of social life called a "research design." An annotated bibliography of major studies is included in this book on the theoretical and methodological aspects of multilevel research and multilevel design.

Ingram, Larry C. 1995. *The Study of Organizations: Positions, Persons, and Patterns.* Westport, CT: Praeger Publishers.

Readers are introduced to basic terms and principles used in the study of organizations as an invitation to further learning. The approach blends classical writing on organizations with current research and examples illustrating key elements of positions, patterns, and persons. A discussion of role analysis shows how these elements enter into the actual behavior of participants. Discussions of such topics as interaction and bureaucracy and a unique chapter on paperwork and record-keeping are presented.

Jones, Steven G., editor. 1995. *Cybersociety: Computer-Mediated Communication and Community.* Thousand Oaks, CA: Sage Publications.

Contents: Introduction: From Where to Who Knows? by S. G. Jones. 1. Understanding

Community in the Information Age, by S. G. Jones. 2. Backstage Critique of Virtual Reality, by C. Kramarae. 3. Nintendo and a New World of Travel Writing: A Dialogue, by M. Fuller and H. Jenkins. 4. Making Sense of Software: Computer Games and Interactive Textuality, by T. Friedman. 5. Standards of Conduct on Usenet, by M. L. McLaughlin, K. K. Osborne and C. B. Smith. 6. Searching for the Leviathan in Usenet, by R. C. MacKinnon. 7. The Emergence of Community in Computer-Mediated Communication, by N. K. Baym. 8. Virtual Worlds: Culture and Imagination, by E. Reid. 9. The E-Mail Murders: Reflections on "Dead" Letters, by A. Aycock and N. Buchignani.

Kempton, Willett, James S. Boster and Jennifer A. Hartley. 1995. *Environmental Values in American Culture.* Cambridge, MA: MIT Press.

Environmental awareness is widespread in America, with polls indicating 60-70 percent of Americans think of themselves as environmentalists. But, according to a six-year study, most Americans have misconceptions about environmental problems, and these misconceptions have implications for both sides in the ongoing environmental debate.

According to the authors, environmental values are enmeshed with other core American values such as parental responsibility and traditional religious teachings. Valuing nature for its own sake is also important to many Americans.

Americans surveyed share many of the same strong environmental values: 73 percent feel that it is wrong to abuse the natural world because God created it; 93 percent said that working hard to try to prevent environmental damage for the future is part of being a good parent; and 40 percent would rather see a few humans suffer or even be killed than to see human

environmental damage cause an entire species to go extinct.

The study, funded by the National Science Foundation, sampled a broad spectrum of the American public, including ordinary citizens, timber industry workers and members of both radical and moderate environmental groups. It documents how scientific information on such issues as global warming, ozone depletion and species extinction is interpreted and transformed by the public and how underlying beliefs and values influence preferences for or against environmental policies.

The study also revealed misunderstandings about global environmental change. For example, 77 percent of the public believes that if all the forests are cut down, there would soon be no oxygen left to breathe; and 43 percent believes that there may be a link between the changes in the weather and the firing of rockets into outer space.

1. Introduction (Measures of American Environmentalism; What Is Environmentalism?; Our Approach: Models and Variation, Beliefs and Values; Non-Western Models of the Environment; Structure of the Book) 2. Background (Our Anthropological Methods; Global Environmental Changes) 3. Cultural Models of Nature (Model of Human Reliance on a Limited World; Models of Nature as Interdependent, Balanced and Unpredictable; Models of the Causes of Environmental Concern; Origins of Cultural Models of Nature; Conclusion) 4. Cultural Models of Weather and the Atmosphere (Global Warming Incorporated into Existing Concepts; Perceptions of Weather; Conclusion) 5. Environmental Values (Religious and Spiritual Values; Anthropocentric Values; Biocentric Values; Conclusion) 6. Cultural Models and Policy Reasoning (Volunteered Policies; Postbriefing Policy Discussion; Models of Institutions; Conclusions) 7. Case Studies of

Influential Specialists (Why Pick Specialists?; Congressional Staff; Advocates; Conclusions) 8. Patterns of Agreement and Disagreement (Patterns of Agreement; Expected versus Actual Patterns of Agreement; Consensus Beliefs and Values; Points of Dissension; Variation and Environmental Groups; Conclusions) 9. Implications of Our Findings (Findings; Is the United States Unusual?; General and Theoretical Questions; Practical Advice) Appendices

Knottnerus, J. David and Christopher Prendergast, editors. 1995. *Recent Developments in the Theory of Social Structure*. Greenwich, Connecticut: JAI Press, Inc.

Recent Developments in the Theory of Social Structure 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, by Christopher Prendergast and J. David Knottnerus. Social Relationships. The New Studies in Social Organization: Overcoming the Astructural Bias, by Christopher Prendergast and J. David Knottnerus. Social Exchange Theory and Social Structure: A Critical Comparison of Two Traditions of Inquiry, by J. David Knottnerus. Expectation States Theory and the Analysis of Group Processes and Structures, by J. David Knottnerus. Social Networks. Networks in

Organizational Structures and Strategies, by David Knoke and Miguel Guilarte. Intraorganizational Relations. Structure and Process: Theory and Research on Organizational Stratification, by Amy S. Wharton. Interorganizational Relations. Institutional Accounts of Organizations as a Form of Structural Analysis, by David Strang. Societal Structures: Stratification Systems and Elites. Social Structure and Life Chances, by Peter M. Blau. Assessing the New Structuralism, by Amy S. Wharton. The Corporate Elite and the Politics of Corporate Control, by Gerald F. Davis. The World System. A Global Social Structure? Evaluating the Advancement of the World-Systems Perspective, by William G. Martin.

Laumann, Edward O., Robert T. Michael, John H. Gagnon, and Stuart Michaels. 1994. *The Social Organization of Sexuality: Sexual Practices in the United States*. Chicago: University of Chicago Press.

Nearly forty-five years after the Kinsey Report, we still know remarkably little about human sexuality. Yet at a time of growing concern about AIDS and other sexually transmitted diseases, unwanted pregnancies, child abuse, and sexual harassment and violence, the need for a comprehensive, scientifically reliable survey of sexual behavior in the United States has never been greater.

The Social Organization of Sexuality, a report on the nation's most comprehensive representative survey of sexual behavior in the general population to date, finally offers that basic information. Conducted by a research team centered at the University of Chicago, the National Health and Social Life Survey (NHSL) was designed to determine not only incidence and prevalence of sexual practices, but also the social and psychological contexts in which they occur.

Based on interviews with a probability sample of 3,432 American women and men between

the ages of 18 and 59, this study explores the extent to which sexual conduct and general attitudes toward sexuality are influenced by gender, age, marital status, and other demographic characteristics. Among the many topics covered are early sexual experiences, masturbation, contraception and fertility, sexual abuse, coercion, sexual health, satisfaction, sexual dysfunction, and homosexuality.

Leeds-Hurwitz, Wendy, editor. 1995. *Social Approaches to Communication*. New York: Guilford Publications.

Bringing together authors from a variety of backgrounds, this book explains the theoretical assumptions of the interpretive position within communication, especially as applied to the study of interpersonal communication. Conceptually, social approaches move toward a fuller understanding of communication practices in their social and cultural contexts.

Leydesdorff, Loet. 1995. *The Challenge of Scientometrics: The Development Measurement, and Self-oriented of Scientific Communications*. Leiden: DSWO Press.

Crucial problems in qualitative and quantitative science studies, such as the significance of a historical reconstruction and the prediction of science indicators, are addressed by using a second-order mathematical theory of communication as a single and encompassing framework. The study provides elaborate applications of probabilistic entropy measures to policy questions (e. g., the emergence of a European R&D system), to problems of knowledge representations, and to the study of the sciences in terms of "self-organizing" paradigms of scientific communication.

Litwin, Howard. 1995. *Uprooted in Old Age: Soviet Jews and Their Social Networks in*

Israel. Westport CT: Greenwood Publishing Group.

This first-hand empirical study of elderly Soviet Jews who immigrated to Israel during the "Great Exodus" of 1989 to 1991 demonstrates the double jeopardy of transnational relocation in later life. The book traces the depletions that occurred in the elderly immigrants' social networks and examines the impact of a range of network factors on their personal well-being. Given the dearth of systematic field research into the problems and needs of elderly immigrants, and of this group in particular, gerontologists and sociologists will find this case study invaluable. Students, teachers, policymakers, social service providers, and other professional practitioners will gain from the findings about elderly immigrants' network relationships and from practical suggestions for the planning of effective network interventions on their behalf.

Contents: Acknowledgments; Introduction; Soviet Jewish Immigration to Israel; The Great Exodus of 1989-1991; The Study; Design of the Book; Immigration in Later Life; Theories of Migration; Typologies of Migration in Later Life; A Review of Migration Studies; Conclusions and Connections to the Present Study; Social Support Networks in Old Age; The Concept of Social Network; Social Networks of the Aged; The Social Networks of Elderly Immigrants; Study Methodology; Overview of the Study; Study Variables; Networks and Network Shifts; Network Structure; Network Types; Network Support; Network Changes; Networks, Support and Well-Being; Health Ratings; Mental Health; Immigration Satisfaction; Profiles of Elderly Soviet Immigrants; The Special Case of the Family; Multigenerational Households; Immigration and Family Dynamics; Family Dynamics and Well-Being; Networks and Service Utilization; Doctor Visits; Senior Center Participation; Artificial Networks and Well-Being; Network Interventions; A Paradigm of Purposive Interventions;

Network Interventions with Elderly Immigrants; A Plan for Intervention with Soviet Immigrants in Israel; Conclusions; Appendix; Selected Bibliography; Index.

Markova, Ivana, Carl Graumann and Klaus Foppa. 1995. *Mutualities in Dialogue*. New York: Cambridge University Press.

Dialogue has developed from more primitive forms of communication during evolution. In *Mutualities in Dialogue*, "dialogue" refers to face-to-face interaction between two or more individuals using a system of signs. It asks the question "What is it that we share in the course of a dialogue?", arguing that mutualities of language, culture and some interpersonal information are prerequisite for effective communication. Even in instances of noncooperation or of asymmetrical dialogue elementary commonalities must be present.

McNeely, Connie L. 1995. *Constructing the Nation-State: International Organization and Prescriptive Action*. Westport, CT: Greenwood Press.

This book analyzes the nation-state political system. Beginning with the theory that political life must be territorially organized, with sovereign authority within a given territory, and discussing how and why this is the preeminent form of political organization and authority throughout the world today, it presents an exploration of the nation-state as a social construction. The author delves into an investigation of the impact of the international organization on nation-state structures and practices and, therefore, on the patterns and behavior that constitute a world culture. Framed by world polity arguments, the nation-state is treated as a cultural object, with the international system as a cultural community giving it meaning, and shaping an defining its structures and practices.

Nohria, Nitin and Robert G. Eccles, editors. 1995. *Networks and Organizations: Structure,*

***Form, and Action*. Boston: Harvard Business School Press.**

Thirty leading scholars in sociology and management explore the significant links between networks and organized action. Their findings demonstrate that networks are a vital component of organizations and must be understood in order to develop and maintain a competitive edge.

Rex, John and Beatrice Drury. 1995. *Ethnic Mobilization in a Multi-Cultural Europe*. Brookfield, VT: Avebury Publishers.

This book deals with two interrelated and intertwined topics. One is that of the meaning of the concept of the multi-cultural society in Europe, both as an ideal, and as a means of describing actual societies. The other is that of ethnic political organizations and the role that they do and should desirably play in a democratic Europe.

Unlike the question of racism on which most liberal scholars are united, the problem of ethnic politics in the multi-cultural society gives rise to considerable controversy which is well represented in this book. For many the notion of the multi-cultural society is a desirable ideal, but for others it involves a kind of apartheid incompatible with the ideals of liberty and equality in such a society and a political situation in which minority groups can be manipulated and controlled.

These themes have been the basis of considerable research in Britain but it has become clear in communications with European scholars that many of the assumptions underlying British research are by no means acceptable to researchers in Europe.

Contents: Ethnic mobilization in multi-cultural societies; Ethnic mobilization: Some theoretical considerations; Ethnicity as action; The formation of ethnic minorities and the

transformation of social into ethnic conflicts in a so-called multicultural society — the case of Germany; Multi-culturalism and ethnic mobilization: Some theoretical considerations; Immigration and the ethnic differentiation of social relations in Europe; Ethnicity and modernity: On 'tradition' in modern cultural studies; National approaches to immigration and minority policies; 1992 and the mobilization of black people; The end of a hegemony: The concept of 'black' and British Asians; Is 'black' an exportable category to mainland Europe? Race and citizenship in a European context; Changes in the Franco-Maghrebian association movement; Immigrant participation and mobilization and integration strategies in France: A typology; Conditions of ethnic mobilization: The German case; The importance of associations and clubs for the identities of young Turks in Germany; Ethnic networks and associations, Italian mobilization and immigration issues in Italy; The politics of labor market stratification and the potential for ethnic mobilization; Conclusion: The place of ethnic mobilization in West European democracies.

Rutman, Darrett B. and Anita H. Rutman. 1994. *Small Worlds, Large Questions: Explorations in Early American Social History, 1600-1850*. Charlottesville, VA: University Press of Virginia.

As avowed empiricist and social historian, Darrett B. Rutman has examined the early American past for more than thirty years. He has chosen the small place as a laboratory to address questions about the economy, religion, social networks, and the very nature of the community. *Small Worlds, Large Questions* spans the problems that he and his collaborator Anita H. Rutman have tackled in a series of fourteen essays. Some appeared as early as the 1960s, while others have never been published, including the Rutmans' work in progress on town and village life in the ante-bellum South.

Contents: 1. By Way of Prologue: Historians' Imperatives, or An Empiricist in a Marxist Den; 2. The "New Social History" in America; 3. Community Study; 4. The Mirror of Puritan Authority; 5. Children of the Fellowship; 6. Governor Winthrop's Garden Crop; 7. People in Process: The New Hampshire Towns of the Eighteenth Century; 8. Magic, Christianity, and Church in Early Virginia; 9. Of Agues and Fevers: Malaria in the Early Chesapeake; 10. "Now-Wives and Sons-in-Law": Parental Death in a Seventeenth-Century Virginia County; 11. The Genesis of Chesapeake Town; 12. The Village South; 13. Myths, Moralities, and Megatheories: The Case of the Antebellum American South; 14. Community: A Sunny Little Dream.

Schroeder, David A., editor. 1995. *Social Dilemmas: Perspectives on Individuals and Groups*. Westport, CT: Praeger Publishers.

Efficient resource management and provision of public goods represent social dilemmas for those involved. They must choose between a course of action that would be in their personal best interest (e. g., overharvesting fishing banks to take a bigger profit; withholding one's contributions to National Public Radio) and some alternative course that would be more advantageous for the community as a whole (e.g., limiting one's present catch to ensure future fishing stocks; contributing to NPR, even though contributors and noncontributors alike would be able to enjoy its programming). The decisions made by those facing social dilemmas are affected by many factors, and the contributors to this book have explored the diverse processes that ultimately lead an individual to choose between self-interest and the well-being of the community.

Scott, W. Richard and John W. Meyer and Associates, editors. 1995. *Institutional Environments and Organizations: Structural*

Complexity and Individualism. Thousand Oaks, CA: Sage Publications.

The institutional theory of organizations has had an enormous impact on the study and structure of organizational theory and research. In *Institutional Environments and Organizations*, the editors report on their major theoretical advances in the past decade and the empirical testing they have done on these theories. Each of the components is divided into separate examinations and focuses on two themes - the interrelationship between organizational complexity and the institutional environment, and the place of the individual within the organization. This collection of articles, many original to this volume, outlines these well-known theorists' current thinking on organizations and points toward new directions in organizational analysis.

Abridged Contents: 1. Developments in Institutional Theory. 2. Institutional Environments and Organizational Complexity. 3. Institutional Environments and the Expansion of Individuality within Organizations.

Scott, W. Richard and Soren Christensen. 1995. *The Institutional Construction of Organizations: International and Longitudinal Studies*. Thousand Oaks, CA: Sage Publications.

The original work in *The Institutional Construction of Organizations* sheds new light on the study of organizations. The editors bring together work from two different research traditions - the United States and the European continent. The collection also layers in several important perspectives of institutional theory, including empirical observations, longitudinal analysis, market-based organizational forms, and attention to the concepts of agency and strategy. The result is a finely textured, fully developed work for scholars and advanced students of organizational theory and behavior.

Abridged Contents: 1. Accounting for Institutions. 2. Organizational Adaptation to Conflicting and Shifting Institutional and Technical Environments. 3. Institutional Effects on Firms and Fields. 4. Institutional Effects on Industries.

Stasiulis, Daiva and Nira Yuval-Davis. 1995. *Unsettling Settler Societies*. Thousand Oaks, CA: Sage Publications.

This fascinating book examines societies where Europeans have settled and become politically dominant over indigenous people - and where a heterogeneous society has developed in class, ethnic, and racial terms. Contributors explore the racial and ethnic cleavages of such societies and invites comparison with a variety of contemporary societies that have involved encounters between native and migrant groups.

Contents: 1. Introduction: Unsettling Settler Societies, by N. Yuval-Davis. 2. Postcolonial Politics in Aotearoa/New Zealand, by P. Spoonley and W. Larner. 3. Race, Ethnicity, and Gender in Australia, by J. J. Pettman. 4. Canada: The Fractious Politics of a Settler Society, by D. Stasiulis and R. Jhapon. 5. Gender, Race, and Class in a Settler Society: North America Between Mexico and Canada, 1590-1990, by D. Janiewski. 6. Miscengenation as Nation-Building: Indian and Immigrants in Peru, by S. Radcliffe. 8. Constructing Race, Gender, and Ethnicity: State Strategies and Opposition Organization in South Africa, by E. Unterhalter. 9. Gender and Ethnicity in Settler Societies: A Zimbabwean Case Study, by S. Jacobs. 10. Between Becoming M'Tourni and Going Native: Gender and Settler Societies in Algeria, by A. Helie. 11. Palestine, Israel, and the Zionist Settler Project, by N. Abdo.

Thomas, Peter. 1995. *The Social and Interactional Dimensions of Human-Computer Interfaces*. New York: Cambridge University Press.

Researchers have recently begun to recognize the importance of sociological and anthropological contributions to the design of human-computer interfaces. Human-computer interfaces range from interfaces for single users to computer supported cooperative work. The *Social and Interactional Dimensions of Human-Computer Interfaces* considers issues such as interpersonal dynamics, cultural readings of technology, the organizational contexts of technology, and the "situated" nature of use and the process of design. It is unique insofar as it covers theory, methodology, and applications in depth. Researchers, designers, and graduate students concerned with the social implications of computers will find this book compelling reading.

Turner, Jonathan H. 1995. *Macrodynamics: Toward a Theory on the Organization of Human Populations*. New Brunswick: Rutgers University Press.

What holds societies together, and then tears them apart? The history of human populations is, ultimately, the story of how populations have become organized, only to disintegrate from within or to be conquered from without. Turner offers a series of elementary principles and a set of models on what are conceived as the driving forces of human organization — population, production, distribution, and power — and their effects on the patterns of socio-cultural differentiation and spatial distribution over time.

Wood, Julia T. and Steve Duck, editors. 1995. *Under-Studied Relationships: Off the Beaten Track*. Thousand Oaks: Sage International Educational and Professional Publisher.

A full understanding of relationship processes must include consideration of theoretically inconvenient and/or socially disfavored instances as well as those whose value and importance, traditionally have been acknowledged in research. "Moving off the beaten track," *Under-Studied Relationships* begins to rectify existing scholarship's tendency to ignore the diverse and emergent forms of relationships that are increasingly evident in modern society. Editors Julia T. Wood and Steve Duck have gathered together outstanding researchers in the field to discuss such largely overlooked issues as long-lasting marriages, cultural-minority relationships, lesbian/gay relationships, simultaneous hierarchical and friendships at work, nonmarital cohabitation, long-distance relationships, and personal relationships over computer networks.

Contents: 1. Off the Beaten Track: New Shores for Relationship Research, by Julia T. Wood and Steve Duck; 2. The Best is Yet to Be: Research on Long-Lasting Marriages, by Fran C. Dickson; 3. Relationships Between Members of Cultural Minorities, by Stanley O. Gaines Jr.; 4. The Relationships of Lesbians and of Gay Men, by Michelle Huston and Pepper Schwartz; 5. Bosses and Buddies: Constructing and Performing Simultaneously Hierarchical and Close Friendship Relationships, by Theodore E. Zorn; 6. Current Trends in Nonmarital Cohabitation: In Search of the POSSLQ, by John D. Cunningham and John K. Antill; 7. "Doesn't Anybody Stay in One Place Anymore?" An Exploration of the Under-Studied Phenomenon of Long-Distance Relationships, by Mary E. Rohlfsing; 8. Love at First Byte? Building Personal Relationships Over Computer Networks, by Martin Lea and Russel Spears.

Dissertations

Leenders, Roger TH. A., 1995. *Structure and Influence: Statistical Models for the Dynamics of Actor Attributes, Network Structure and their Interdependence*. Ph.D. Dissertation, Interuniversity Center for Social Science Theory and Methodology, University of Groningen. Amsterdam, NL: Thesis Publishers.

Social network analysis has become an important tool in studying social phenomena. An issue often addressed is how the structure of a network affects the actors comprising it; for instance, how is the behavior of actors influenced by the behavior of (particular) other actors in the network? An issue less commonly explored deals with how actors shape their networks; for instance, on the basis of what attributes do organizations choose other organizations as partners? In addition, these two issues are interdependent; for instance, friends are often chosen on the basis of similarity of behavior and interests, but at

the same time, friendship makes friends more similar. Theoretical models for changes in behavior and/or network structure exist, but statistical models for actual testing and forecasting are largely lacking. This book provides such statistical models with the help of which it is possible to answer a range of questions concerning the dynamics in networks, including the questions raised above.

Contents: 1. Social Networks: Causes and Consequences; 2. Contagion and Selection: The Theoretical Framework; 3. Contagion: Modeling Network Effects on Actor Attributes; 4. Selection: Modeling Effects of Actor Attributes on Network Structure; 5. Contagion and Selection: Untying the Knot; 6. A Human Services Network: Examples of Analyses; 7. Summary and Conclusions.

1995 American Sociological Association Conference

The 1995 American Sociological Association Conference was held August 19-23 at the Washington Hilton & Towers, Washington DC USA.

Blair, Sampson Lee and Marilou C. Legazpi Blair. Arizona State University. "Minority Single Mothers and Pragmatic Usage of Social Support Networks."

Blair, Sampson Lee and Michael P. Johnson. Arizona State University. "Parent-Child Social Support Systems and Parental Well-Being: Implications for Single Mother's Well-Being."

Burke, Peter J. Washington State University. "An Identity Model for Network Exchange."

Burt, Ronald S. University of Chicago. "Social Capital, Structural Holes, and the Entrepreneur."

Cerulo, Karen A. Rutgers University. "Technological Ties That Bind: Rethinking Social Cohesion."

Chaves, Mark A. University of Notre Dame. "Ordaining Women: The Diffusion of Organizational Innovation."

Dai, Xihnyuan, Linton C. Freeman, Danching Ruan, Yunkang Pan, and Wenhong Zhang. University of Chicago. "Personal Support Networks in China and the Netherlands."

Elder, Glen H., Jr. and Stephen T. Russell. Univ. of North Carolina, Chapel Hill. "Academic Successes and Failure Among Disadvantaged Youth."

Falcon, Luis M. Northeastern University. "Social Networks and Employment Outcomes."

Fine, Gary A. and Lori Holyfield. University of Georgia. "Secrecy, Trust, and Dangerous Leisure: Generating Group Cohesion in Voluntary Organizations."

Fitz Gibbon, Heather M. Coll Wooster. "The Development of a Feminist Ideology in Family Day Care Workers."

Forbes, Catherine. Florida State University. "Gendered Dimensions of Embeddedness in Paid-Work Organizations: The Concept of Social and Cultural Embeddedness Revisited."

Frank, Kenneth A. Michigan State University. "Identifying and Mapping Cohesive Subgroups"

Gabbay, Shaul M. and Yoshimichi Sato. University of Chicago. "Revisiting Social Capital through Images of Social Structure."

Gabbay, Shaul M. and Ezra W. Zuckerman. University of Chicago. "Relations and Opportunity in Corporate R. & D.: The Contingent Effect of Brokerage on Mobility Expectations."

Gold, Barry Allen. Pace University. "Explaining Educational Innovation: A New Paradigm."

Green, Gary P., Leann M. Tigges and Irene Brown. University of Wisconsin. "Social Resources, Job Search and Poverty in Atlanta."

Gurney, Cynthia A., Charles W. Mueller and James L. Price. Nursing Research Service Walter Reed Army Medical Center, Washington, D.C..

"Job Satisfaction and Organizational Attachment of Nurse Doctorates."

Han, Shin-Kap. Cornell University. "Patterns of Auditor Choice and a Market Outcome."

Henning, Christian H. C. A. and Petri Uusikyla. University of Mannheim. "The Impact of Communication Networks on Political Bargaining among Public and Private Organizations-Theoretical Conceptions and Empirical Evidence."

Hossain, Zakir. Lock Haven University. "Determinant of Kin Reliance in Transnational Migration an dInitial Adjustment : A Study of Laotian Immigrants in the United States."

Ishio, Yoshito. University of Minnesota. "Organizational Constraints on Interest Groups' Choice of Lobbying Tactics."

Luo, Jar-Der. Institute for European and American Studies Academia Sinica, Nankank Taipei Taiwan. "Everyone is a Boss — A Network Approach to Study Taiwanese Small Investments."

Marjoribanks, Timothy Kevin. Harvard University. "New Technology and Workplace Reorganization in Australia and Britain in the 1980s."

Marx, Gary T. and Mary Virnoche. University of Colorado, Boulder. "Only Connect: E. M. Forster in an Age of Computerization: A Case Study of the Establishment of an Electronic Network."

Marx, Marcia J. University of Wisconsin, Eau Claire. "The Shadow Hierarchy."

Menjivar, Cecilia. RAND Corporation. "On Immigrant Kinship Networks: The Impact of the Receiving Context in the 1990s"

Michener, H. Andrew and Daniel J. Myers. University of Wisconsin. "A Comparative Test

of Probabilistic Coalition Structure Theories in Sidepayment N-Person Games."

Miraglia, Stephen Joseph. Arizona State University. "Empowerment, Teams, and Diversity at Hi Tech Inc.."

Newman, Andrew E. Ohio State University. "Interorganizational Structure and the Survival of State Agencies: Embeddedness and Autonomy in State Organization."

O'Connell, Lenahan L. O'Connell and Associates. "Social Structure, Information, and Income Inequality: A Neofunctionalist Theory of Stratification."

Raider, Holly J. University of Chicago. "Market Structure Effects on R & D and Innovation: Differences across Industries."

Roberts, Carl W. Iowa State University. "On the Universe of Text-Related Questions about Which Statistical Inferences May Be Drawn."

Rose, Fred R. Tufts University. "Bridge Builders in Inter-Class Coalitions."

Schmitz, Mark F., Daniel W. Russell and Carolyn E. Cutrona. Iowa State University. "Perceived Social Support and Social Network Influences on Physician Utilization among the Elderly."

Schneider, Andreas. Indiana University. "Indicating Structural Properties within Data on Affective Meaning."

Shelly, Robert K. Ohio University. "Sequences and Cycles in Social Interaction."

Silver, Steven D. and Lisa Troyer. Stanford University. "The Exchange of Negative Evaluations as Information and Affect: Dynamic Processes of Evaluation in Interactive Groups."

Sinovac, Maximiliane E. Old Dominion University. "Living with Grandparents: A Cohort Analysis."

Sothoran, Jo L. National Development & Research Instits Inc. "Domestic Groups and Sources of Social Support among Injecting Drug Users: Gender and Life Course Contexts."

Suitor, J. Jill and Karl Pillemer. Louisiana State University. "Changes in Support and Interpersonal Stress in the Networks of Married Caregiving Daughters: Findings from a 2-Year Panel Study."

Turner, Jonathan H. University of California. "A Functional Theory of Societal Disintegration."

Wellman, Barry and Milena Gulia. University of Toronto. "When Social Networks Meet

Computer Networks: The Policy Implications of Virtual Communities."

Wright, Eric R.. Indiana University. "The Gender Composition of Caregiver Networks: A Latent Source of Caregiver Burden in Severe Mental Illness."

Wu, Xiaoquin. Lenoir-Rhyne College. "The Effects of Social Supports in the Stress Process."

Younts, Charles Wesley. "The Concept of Control: Analyzing Social Relationships within Modern Corporations."

Zhou, Min. University of California. "Social Capital in Chinatown: The Role of Community-Based Organizations and Families in the Adaptation of the Younger Generation."

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 to 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 Web browsers like MOSAIC and NETSCAPE, or 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.

World Wide Web Access

Just point your browser to the following address: <http://thecore.socy.scarolina.edu/insna.html>

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.socy.scarolina.edu

USER: anonymous

>cd /pub

>binary

>get freemap.exe

>quit

{start ftp and connect to INSNALIB computer}

{when asked for user or account name, type "anonymous"}

{change directory to the INSNALIB **reading** area where all files are kept}

{tell ftp that you are downloading a binary file rather than a simple text file}

{copy the "freemap.exe" file to your account}

{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.sc Carolina.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@sc Carolina.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.sc Carolina.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.sc Carolina.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.sc Carolina.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.sc Carolina.edu
USER: anonymous
>help
.....list of topics appears here.....
>help dir
.....information on the dir command appears here.....
>quit
```

WANTED:

Material for the social networks web page. For example:

- course syllabi
- software
- data
- material to supplement a journal article
- links to other web pages

Send to Mark Dawson at dawsonm@sc.edu or Computer Services Division, University of South Carolina, Columbia, SC 29208 USA

Social Networks Web Page

To access the INSNA world wide page, just point your net browser to:

<http://thecore.socy.sc.edu/insna.html>

Place Your Ad Here!

To Contact INSNA or CONNECTIONS

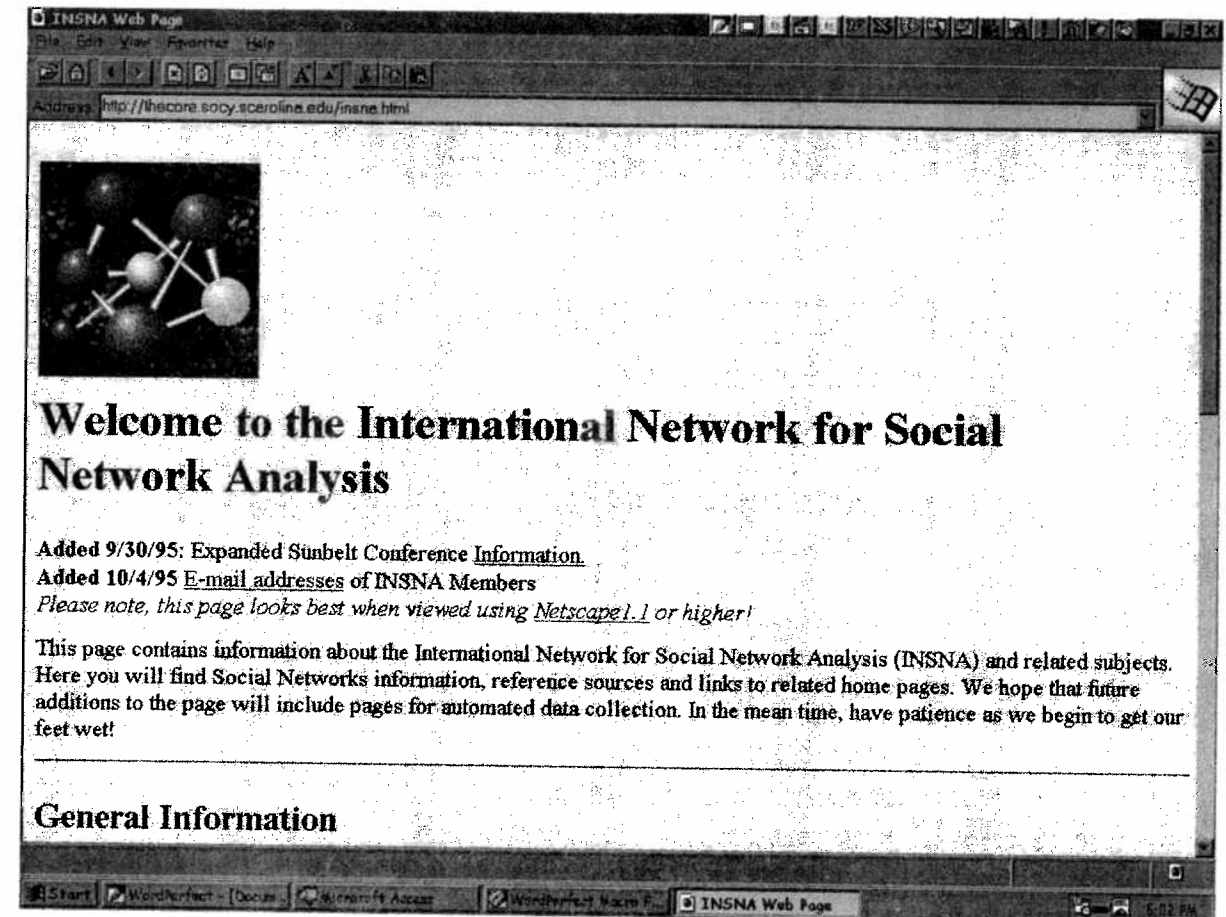
Membership/subscriptions: Call Steve Borgatti at (617) 552-0452 or email Steve.Borgatti@sc.edu.

Manuscript submissions: Call John Skvoretz (803 777-4968) or email him at Skvoretz-John@sc.edu, or email Katie Faust at Katie-Faust@sc.edu.

SOCNET/Web page: Send email to Mark Dawson at dawsonm@sc.edu.



Snapshot of the INSNA Home Page <http://thecore.socy.sc.edu/insna.html>



Browser: Microsoft Internet Explorer

INSNA

International Network for Social Network Analysis

Coordinator

Stephen P. Borgatti

International Affairs

Barry Wellman

Information Technologies

Mark Dawson

Subscriptions

"Al" Stachura & Tonji Durant

Board of Directors

Russ Bernard ★ Phil Bonacich

Alain Degenne ★ Pat Doreian ★ Martin Everett

Lin Freeman ★ Thomas Schweizer

Frans Stokman

Staff

Steve Taylor