

CONNECTIONS

Spring 1998 Volume 21 Issue 1

Our Ties
to the Early Years
of Network Research



Barcelona

Abstracts
Ties and Bonds

Analyzing
Clique Overlap

Continuity
& Change in
Russian Networks

Fitting p^*
Models Via
Logistic Regression

Official Journal of the International Network for Social Network Analysis

CONNECTIONS

Publisher & Editor

Stephen P. Borgatti
borgatts@bc.edu

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Editorial Offices

Dept of Org. Studies
School of Management
Boston College
Chestnut Hill, MA
02167 USA
(617) 552-0452

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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 via our WWW site, located at <http://www.heinz.cmu.edu/project/INSNA/>. 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.

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CONNECTIONS

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1998

January

Linguistic Society of America. 8-11 January. Grand Hyatt, New York, NY
<http://www.lsadc.org/>

March

Association for Computing Machinery (ACM). March 1-5, San Jose, California.
<http://www.acm.org>

April

Pacific Sociological Assoc.
April 16-19. San Francisco, California. Cathedral Hill Hotel
<http://www.csus.edu/psa/psa2.html>

INFORMS/CORS. Montreal, April 26-29.
<http://www.informs.org/>

Society for Applied Anthropology. April 22-26. San Juan, Puerto Rico.
becky_joseph@nps.gov

May

Sunbelt International Social Networks Conference. May 28-31. Barcelona, Spain.
www.heinz.cmu.edu/project/INSNA/

July

World Congress of Sociology. July 26 - Aug. 1, Montreal.

August

American Sociological Assoc.
Aug 21-25. San Francisco, USA
<http://www.asanet.org/>

Academy of Management.
August 9-12. San Diego, California. Marriott Hotel
<http://www.aom.pace.edu>

24th International Congress of Applied Psychology.
August 9-14. San Francisco,

September

ICES98: Second International Conference on Evolvable Systems: Biology to Hardware. Sept 24-26. Lausanne, Switzerland
<http://lslwww.epfl.ch/ices98/>

American Political Science Assoc. September 3-6. Boston, MA
<http://www.apsanet.org/>

October

INFORMS. October 25 - 28. Seattle, WA
<http://www.informs.org/Conf/Conf.html>

December

American Anthropological Assoc. Dec. 2-6. Philadelphia, PA.
<http://www.ameranthassn.org/>

1999

February

Sunbelt International Social Networks Conference. Feb 17-21. Charleston, South Carolina.
www.heinz.cmu.edu/project/INSNA/

August

American Sociological Assoc.
August 6-10: Chicago, Illinois
<http://www.asanet.org/>

European Sociological Assoc.
Aug 27-30. Colchester, UK.
ESA97@essex.ac.uk

Academy of Management.
August 8-11. Chicago, Illinois. Hyatt Regency Chicago.
<http://www.aom.pace.edu>

September

American Political Science Assoc. Sept. 2-5. Atlanta, GA
<http://www.apsanet.org/>

November

American Anthropological Assoc. Nov 17-21. Wash., DC.
http://www.ameranthassn.org

New Journal: STRUCTURAL ANALYSIS

INSNA has agreed to handle subscriptions for a new journal focusing on social networks. The journal is called *Structural Analysis*, and is edited by Al Wolfe, along with Associate Editors Steve Berkowitz and Al Kløv Dahl.

INSNA members can subscribe (starting now!) for a special discount price of \$62.50 per year (non-members will pay more than \$100).

The following description of the journal was written by **Steve Berkowitz**. The views expressed are his own, and do not necessarily coincide with those of INSNA or its membership.

Structural Analysis

Structural Analysis is a relatively new paradigm in the social sciences. While its roots lie in sociology in the 1950s, it begins to develop seriously as a coherent theoretical and methodological approach in its own right in the mid 1960s. Its primary theoretical focus is on "social structure" as a mechanism for regulating and orchestrating other aspects of social life (Berkowitz, 1982).

In the late 1970s, structural analysts founded the International Network for Social Network Analysis (INSNA). INSNA now has between 350 and 400 dues-paying members and a like number of fellow travelers. Together, members of INSNA supervise over 200 graduate students. They hold an annual meeting which is normally attended by approximately 250 people. From its inception, INSNA has been associated with two publications: a methodologically oriented journal, *Social Networks*, which has been published by Elsevier since 1978/79, and a newsletter/house journal, *Connections* (1978-), which occasionally incorporates articles on theoretical and methodological work in progress. *Social*

Networks is held by most academic libraries¹. A number of libraries also hold *Connections*.

At the point when structural analysis emerged as a paradigm in the late 1970s, the majority of the work in the area centered on data organization and analysis (Berkowitz, 1982; Burt and Minor, 1983). In fact, structural analysts often sought out small datasets whose properties were well-known for use as "experimental animals". As a result, a major criticism of some of this work was that it applied powerful methods for solving trivial or uninteresting problems. Since then, the field has constantly expanded and these methods have been applied to a wide variety of substantive problems ranging from the structure of work groups, to authority in monasteries, to corporate structure, to the dispersion of sexually transmitted disease, primate behavior, and a variety of other active research areas, as well (Wellman and Berkowitz, 1988; 2nd Edition, Preface, in press). Most recently Douglas Heckathorn and the late James Coleman have begun building bridges between structural analysis and game theory and, hence, to the types of problems to which game theory has been applied.

In the last several years, this expansion of the field has led to a virtual explosion of substantive work. *Connections*, which publishes quarterly, abstracts about 100 articles and books per issue. The articles are published in a variety of top-flight specialized and general journals, such as the *Journal of Health and Social Behavior*, *Community Mental Health Journal*, *Journal of Social and Personal Relationships*, *American Journal of Sociology*, *Social Forces*, *British Journal of Sociology*, *Canadian Review of Sociology and Anthropology*, and the *Revue Francaise de Sociologie*. In one sense, this is healthy: it means that, as a paradigm, structural analysis has joined the mainstream. In another

¹For instance, the University of Natal in Durban, South Africa.

sense, however, it is not so healthy: it leads to a dispersion of materials that makes it very difficult for structural analysts to keep track of developments in such a way that these become cumulative and convergent. As opposed to its methodology, which first appears in *Social Networks* and then diffuses to the general or non-specialized journals, theory and new applications in structural analysis first appear in general journals and in books; only gradually getting synthesized and reported.

We think that this state of affairs is not desirable, that it has slowed the development of the paradigm and that it has acted to fragment the "invisible college". We propose to remedy it by creating a journal which (a) will encourage the creation of a body of theory reflecting increased insights into the nature of social structure, and (b) will provide a home for the very best applied or substantive work being done from a structuralist perspective. Together, this should provide a welcome complement to the methodological focus of *Social Networks* and, at the same time, tie substantive research more closely to the theories which can be used to interpret and extend it. We propose to begin this process this summer by assembling an editorial board², creating a list of reviewers, creating a format and style rules, putting together the first two issues, and, together with a publisher, advertising the journal to both members of INSNA and people in related areas. Our plan is for Berkowitz to set this process in motion, but for Wolfe to edit the journal for its first two years. Klovdahl and Berkowitz will act as associate editors during this time. At the end of two years, the editorship will rotate to either Klovdahl or Berkowitz for another two years. The second associate editor will then act as editor for two years and the editorship will then either rotate back to Wolfe or to some new associate editor added during this initial time period. Associate editors will review manuscripts and assign them to reviewers.

Thus, while, like *Social Networks*, this journal will be sponsored by INSNA, and should be marketed together with INSNA membership, it should also (a) appeal to a broader audience interested in formal theory construction and (b) should lead to a greater consolidation of substantive results and empirical observations. It should be more easily

²We have already done this to some extent. Edward Laumann and Douglas Heckathorn, for instance, have agreed to become part of it.

and more widely read than *Social Networks* since it will assume only a journeyman's knowledge of methods and mathematics.

~ Steve Berkowitz

To subscribe to *Structural Analysis*, contact Candace Jones at the following address:

Dept. of Organization Studies
Carroll School of Management
Boston College
Chestnut Hill, MA 02167

E-mail: jonescq@bc.edu
Tel: (617) 552-0457
Fax: (617) 552-4230

Well, that's all the news for now. See you in Barcelona!

Steve Borgatti
INSNA Coordinator
borgatts@bc.edu



SUNBELT XVIII and 5th EUROPEAN INTERNATIONAL CONFERENCE ON SOCIAL NETWORKS

The International Conference on Social Networks which is the joint 5th European and 18th Sunbelt Conference will be held at the Gran Sitges Hotel in Sitges (near Barcelona), Spain, from Thursday, May 28 through Sunday, May 31, 1998. On Wednesday, May 27, the registration will start, and there will be various workshops and social events. Information about the conference can be found at the web site <http://www.ub.es/sociol/nagar.htm> and also at the INSNA web site, <http://www.heinz.cmu.edu/project/INSNA>.

The conference provides an interdisciplinary forum for social scientists, mathematicians, computer scientists, ethologists, and all others interested in social networks. Conference sessions allow individuals interested in theory, methods, or applications of social networks to share ideas and common concerns.

SPONSORSHIP

The sponsors of this conference are INSNA, the Universitat de Barcelona, and the Universitat Autònoma de Barcelona.

PROGRAM COMMITTEE

The program committee consists of:

- Frans Stokman (University of Groningen), chairman
- Steve Borgatti (INSNA)
- Thomas Schweizer (University of Cologne)
- Tom A.B. Snijders (University of Groningen)
- Evelien Zeggelink (University of Groningen)

LOCAL ORGANIZATION

The local organising committee consists of:

- Jose Luis Molina (Autonomous University of Barcelona)
- Josep Rodriguez (University of Barcelona)

CONFERENCE PROGRAM

Sessions are planned on a number of topics. The following are the session themes, as of the date of this printing. Additional sessions will be created based on paper contributions.

- "Family seen as network" Walter Bien, bien@dji.de
- "Networks and Games" Elisa Bienenstock, ejb@leland.stanford.edu
- "Cognition and social networks" Kathleen Carley & Evelien Zeggelink,
carley+@centro.soar.cs.cmu.edu
E.P.H.Zeggelink@ppsw.rug.nl
- "Networks and virtual organizations" Noshir S. Contractor, nosh@ux6.cso.uiuc.edu
- "Social capital and its measurements" Alain Degenne, Michel Forse, Tom Snijders,
& Henk Flap
Degenne@criuc.unicaen.fr
- "Blockmodels" Pat Doreian, pitpat+@pitt.edu
- "Gender, work, and networks" Bonnie Erickson, ericson@chass.utoronto.ca
- "Methodology" Martin Everett, m.g.everett@greenwich.ac.uk
- "Quality of network data" Anuska Ferligoj, anuska.ferligoj@uni-lj.si
- "Exchanges in personal networks" Alexis Ferrand, alexis.ferrand@univ-lille1.fr
- "Statistical network models" Ove Frank & Tom Snijders, ove.frank@stat.su.se
- "Health care and social networks" Jane Holschuh, HOLSCHUH@macc.wisc.edu
- "Cohesion and Solidarity" Eugene C. Johnsen, johnsen@math.ucsb.edu
- "Communication and exploration:
Issues in social network visualization" Patrick Kenis, Patrick.Kenis@uni-konstanz.de
- "Organizational networks" David Krackhardt & Emmanuel Lazega
krack+@andrew.cmu.edu
- "Policy networks" Thomas Koenig, tkoenig@mzes.uni-mannheim.de
- "Hierarchies in markets" Alessandro Lomi, alx@economia.unibo.it
- "Advances in the Study of Personal Networks" Chris McCarty, ufchris@ufl.edu
- "Networks and Professions" Josep A. Rodriguez, jardiaz@riscd2.eco.ub.es
- "The problem of institutions:
cooperation in exchange and evolution" Thomas Schweizer & Douglas R. White
Thomas.Schweizer@UNI-KOELN.DE
- "Social capital in post communism" Endre Sik, sik@tarki.hu
- "Evolution of Social Networks" Frans N. Stokman & P. Doreian, F.N.Stokman@ppsw.rug.nl

- "Social support networks" Theo van Tilburg, TilburgTGvan@scw.vu.nl
 "Diffusion of Innovations" Thomas W. Valente, tvalente@jhu.edu
 "Computer Networks and Social Networks" .. Barry Wellman, wellman@chass.utoronto.ca
 A panel discussion will be held with the title
 "Whither Social Networks?" Steve Borgatti, borgatts@bc.edu

KEYNOTE SPEAKER

The keynote speaker is prof. Rolf Ziegler of the University of Munich. His address will be given at Thursday, 7 p.m.

THE SETTING

The Conference will be held in Sitges, the most charismatic and cosmopolitan coastal area of the Catalan region. It is close to Barcelona (about 20 minutes away) and the international airport.

The Hotel MELIA GRAN SITGES offers 307 rooms with sea views and satellite T.V. The hotel has an excellent fitness centre including muscle fitness, cardio-vascular fitness, heated pool, sauna, steam bath, UVA lamps, hair styling and massage. More hotel information can be found at the web site <http://www.solmelia.es/directorio/msitges/isitges.html>

NETWORK ANALYSIS WORKSHOPS

Four workshops are held on Wednesday, May 27 (the first three starting early Wednesday morning).

A. **Josep A. Rodriguez and Jose Luis Molina:** **El analisis de redes en Espana y Latinoamerica.**

Esta jornada se divide en dos partes. En la sesion de la manyana se analizaran investigaciones realizadas en los ambitos de:

- * redes inter-organizaciones,
- * redes intraorganizacionales,
- * capital social.

Estas investigaciones se presentaran en forma de taller de forma que sea posible una participacion activa. La sesion de la tarde se reserva a las contribuciones en castellano que investigadores de diferentes disciplinas estan llevando a cabo en el campo del analisis de redes sociales en Espanya e Iberoamerica.

**B. Steve Borgatti and Martin Everett:
An introduction to Network Analysis.**

This workshop is intended as a general introduction to social network analysis from an applied, how-do-you-do-it perspective. The topics include: differences between network analysis and other analytic traditions; network data collection and mathematical representation; visual representation of network data; elementary graph theory; centrality and centralization; hypothesis testing; detection of subgroups; and analysis of positions and roles. Participants will be instructed in the use of UCINET 5.0 software, which will be provided for no extra cost (manuals are not included). Participants are asked to bring laptop computers running Windows 95 or NT in order to run the software. (Non-continental Europeans: Even if your laptop automatically handles 220-240 volts, you will need to bring a plug adaptor.)

**C. Frans Stokman, Siegwart Lindenberg and Tom Snijders:
Rational Choice and Social Networks.**

Historically, the emphasis in social networks is heavily on the analysis of static network structures. In this workshop, social networks are seen in the context of processes and especially the micro-macro perspective. In this perspective, social networks are primarily seen in the context of joint goal attainment of social actors. For this reason, it is important to include a theory of goals in network analysis. The structure of networks will be influenced by the kinds of goals they serve. Because individuals regard networks as part of their own goal achievement, networks are also cognitive entities. The network structure itself is seen as the intended or unintended consequence of simultaneous choices of persons or other social units, represented by these persons. In turn, a network (and the individual position within it) is also a bundle of constraints or opportunities for action. Social network structures and positions should, therefore, be treated both as dependent and as independent variable of behavior of social actors. Within this paradigm, the following topics are treated:

1. Individual goal structures and social production functions and the relation of networks to groups.
2. Social networks in game theory.
3. Approaches and techniques for the simulation of network evolution.
4. Statistical models for the formation and evolution of networks (actor-oriented stochastic models) and for contagion (spatial autocorrelation).

**D. Vladimir Batagelj and Andrej Mrvar:
Pajek - Workshop (wednesday afternoon only)**

Large networks (networks having thousands of vertices and lines) can be found in many different areas, e.g: flowcharts, molecule, computer networks, transportation networks, genealogies, citation networks, intra/inter organisational networks ... Pajek is a PC (Windows) program package for analysis and visualization of large networks. It is freely available at

<http://vlado.fmf.uni-lj.si/pub/networks/pajek/>

The workshop will consist of two parts:

Guided tour:

- Pajek data types (network, cluster, partition, permutation, hierarchy) and files (NET, GED, Vega, XYZ, EPS, PS, VRML);
- network drawing: automatic layouts, manual editing, 3D representations, viewer;
- basic analyses: degree distributions, components (weak, strong, bi-); substructures: k-neighbors, kernels, cliques, ...
- transformations: extracting subgraphs, shrinking clusters, ...
- tools: CPM, flow, shortest path(s), ...
- macros: user defined commands.

Selected examples:

- Erdos graph, TCS (theoretical computer science) phd graph, graphs from Internet, citation networks, graphs from social networks literature.

In the second part, participants with their own laptops, could try to do the analyses by themselves - because of very high costs we decided not to use local computers. (Non-continental Europeans: bring a plug adaptor if you take your laptop!)

E. Barry Wellman:

A Non-Technical Introduction to Social Network Analysis

This 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).

F. 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.

PAPER SUBMISSIONS

To submit a paper for the conference, send an abstract of no more than 200 words by email or diskette (ASCII or WordPerfect), as well as a hard copy, to the program organisation by January

15, 1998. Those who wish to propose that their paper be included in one of the sessions mentioned above should also send the abstract by email to the session organiser. Abstracts will be distributed at the conference. Participants may give one single-authored paper or its equivalent (e.g., two jointly-authored papers by two participants).

Abstracts should be sent to:

Program Committee
International Social Network Conference
ICS
Grote Rozenstraat 31
9712 TG Groningen
The Netherlands
fax +31 - 50 - 3636226
email Social.Networks@ppsw.rug.nl

HOTEL RESERVATIONS

The conference is held at the Hotel Melia Gran Sitges. Be sure to mention the INSNA to get the conference rate.

Double room: 17,000 ptas./night
Single room: 14,000 ptas./night

Buffet breakfast included. These prices are exclusive of 7% VAT.

To book, send a fax to +34-3 894 90 34 or book by web at

<http://www.solmelia.es/cgi-bin/solres/make/resr1?40807>

It is necessary to pre-pay 45% of the total amount in order to guarantee the reservation. Please book your room as soon as possible. Late bookings may lead to problems.

CONFERENCE REGISTRATION FORM

In order to avoid currency problems, the conference fees are determined in Spanish pesetas. For your information the approximate amount in US dollars is also indicated. If exchange rates change, the Peseta price will remain constant.

Fill out the form below, including credit card details, and send to:

NAGAR
Departament de Sociologia
Universitat de Barcelona
Av. Diagonal, 690
Barcelona 08034
SPAIN
Fax:(+34 3) 280 23 78, (+34 3) 402 90 56

Your full name: _____

Institution/organization: _____

E-mail address: _____

Postal address: _____

OPTION TO JOIN INSNA (1998)

Regular INSNA membership fee at \$40 _____

Student INSNA membership fee at \$25 _____

CONFERENCE REGISTRATION

Regular INSNA member at 10,000 pesetas (\$75) _____

Regular non-member at 16,500 pesetas (\$120) _____

Student at 6,000 pesetas (\$45) _____

BANQUET (Thursday evening)

4,500 pesetas (\$35) per person for _____ persons _____

WORKSHOP FEES

A. Josep A. Rodriguez and Jose Luis Molina:
"El analisis de redes en Espana y Latinoamerica": Ptas 4,000 _____

B. Steve Borgatti and Martin Everett:
"An introduction to Network Analysis":
Students Ptas 7 000 and others Ptas 14 000. _____

C. Frans Stokman, Siegwart Lindenberg and Tom Snijders:
"Rational Choice and Social Networks": Ptas 5 000 _____

D. Vladimir Batagelj and Andrej Mrvar:
"Pajek - Workshop": Ptas 4 000

E. Barry Wellman:
"A non-technical Introduction to Social Network Analysis":
Ptas 4 000

F. Frank Harary:
"Graph Theory Basics: The Heart of Network Analysis":
Ptas 5,000

Total Payment: _____

CREDIT CARD INFORMATION

Credit card type: Visa Mastercard

Card Number: _____

Exp.Date _____

Signature: _____

Note: A copy of this form can be found on the conference web site at:

<http://www.ub.es/sociol/nagar.htm>

**SUNBELT XVIII AND 5TH EUROPEAN
NETWORK CONFERENCE
PRELIMINARY PROGRAM**

PRELIMINARY PROGRAM

Note that the conference starts on Wednesday may 27 with a number of workshops. Paper presentations start at Thursday morning 08:30 and end on Sunday afternoon 13:00.

Titles of papers and names of authors are presented for each session separately. Each session's abbreviation is used in the overall schedule (added to the end of this text), to indicate the time and location of that session. The number following that abbreviation indicates the number of the corresponding paper in that session.

fam - Sunday May 31, 9:00 - 13:00
Family seen as Network
 Organizer: W. Bien

1. Michaela Buettel, Kathrin Hess, Judith Kummer, Kay Ueber
 Living in a family or living in families? Comparison of different family structure definitions (instruments) and different views on one family context.
2. Donald Bender
 Description of family as Function of Distance.
3. Jan H. Marbach
 Altering Living Arrangements and their Effects on Personal Networks
4. Walter Bien
 Family defined as dynamic kinship network
5. Christine McRae
 Paradox in Family Ties for Drug-Use Cessation and Social Integration
6. Christian Alt and Sabine Sardei-Biermann
 Inner family relations between family members
7. Peter Mutschke
 Youth and Family. Processing science-structural networks in bibliographic social science database

gam - Thursday May 28, 17:00 - 18:00
Networks and Games
 Organizer: Elisa Bienenstock

1. Johan Nylander
 Differences between network exchange theory and game theory
2. David Willer
 Power beyond adjacencies

cog - Thursday 15:00 - 16:30, Friday 08:30 - 18:00
Cognition and social networks
 Organizers: Evelien Zeggelink and Kathleen Carley

A: Cognition and Social Networks

1. Jeff Johnson & M.K. Orbach

Patterned Biases in Cognitive Social Networks: The Relationship Between Social Role and Social Perception in a Political Network

2. Daniele Bondonio
 Predictors of accuracy in perceiving informal social networks
3. Bill McEvily
 Assessing the validity of ego-centered network measures

B: Semantic Networks and Text Analysis

4. Martin Ruef
 Semantic Networks: Cognitive Systems of Belief and Evaluation
5. Joan-Miquel Verd, Carlos Lozares, Joel Mart
 Network Analysis Applied to Narrative Interviews
6. Anna Langhorne & Joseph Woelfel
 Semantic Networks from Automated Text Analysis: Implications of Moving Window and Case Based models.
7. Joel Mart, Carlos Lozares, & Joan Miquel Verd
 Action Logics Analysis

C: Cognition and organizational networks

8. Amalya L. Oliver
 Cognitive Modes of Networking: Evidence From Biotechnology
9. Vincenza Odorici
 Transitivity, cognitive social structures and the assessment of strategic similarity among competitors.
10. Juan-Carlos Pastor
 The Social Construction of Leadership: A Semantic and Social Network Analysis of Social Representations of Leadership
11. Oliver Altehave & Frank Morath
 Knowledge creating networks: mapping the way an organization thinks and learns

12. Kenneth Preiss
 Intra-Firm Actor Networks and Cognitive Complexity in Innovation Creation

13. Antero Kiianmaa
 Involvement In Communication Networks As A Predictor Of The Intensity Of Company Commitment

D: Other topics of social cognition and networks

14. Andreas Flache, James Kitts, and Michael Macy
Attractor Neural Network Models of Bivalent Interaction

15. Eugene C. Johnsen and Noah E. Friedkin
Social Influence Networks and Opinion Change

vir - Saturday May 30, 08:30 - 13:00

Networks and virtual organizations

Organizer: Noshir Contractor

A: Networks and virtual organizations: Empirical research

1. Manju Ahuja & Kathleen Carley
Network Structure in Virtual Organizations

2. Cynthia Stohl, Kasey Walker, and Jennifer Craig
The dynamics of collaboration networks

3. Noshir Contractor, Robert Whitbred, and Fabio Fonti
Focusing on the forest when you can't see all the trees:
The Influence of Cognitive Aggregated Structures (CAS) in
a Virtual Organization

4. Alessandro Baroncelli
Virtual organization and real competition in professional
soccer: The case of a top Italian club

B: Networks and virtual organizations: Conceptual issues and frameworks

5. Candace Jones
Inter-Organizational Network Dynamics: Partner Signaling
And Selection

6. Mario Benassi and Arent Greve
Looking for a Network Organization

7. Peter J. Robertson & Jonathan V. Speier
Organizing for international development: a collaborative
network-based model

8. J. Kallas, A. Hatziyianni, and P. Ktenidis
Identification of social and economical parameters
governing the formation of a network firm

**cap - Thursday May 28, 08:30 - 18:00, Friday May 29,
08:30 - 13:00**

Social capital and its measurements

**Organizers: Alain Degenne, Michel Forse, Henk Flap,
and Tom Snijders**

1. Wolfgang Sodeur
Regional Differences of Children's Social Relationships

2. Mario Diani
Social capital and social movements: Measuring social
movement consequences at the individual level

3. Robert Tardos
On the Interpretation of the 'Social Capital' Concept and
Attempts for its Measurement in the Hungarian Case

4. Bonnie Erickson

Social Capital as Network Variety: Sources in Organi-
zational Life and Life in General

5. Alain Degenne, Marie Odile-Lebaux, and Lise Mounier
Mutual Help between Households: Does it show manage-
ment of social capital?

6. Sebastien Reichmann
Network Structure, Job Search and Psychological Well-
being: Paradoxes of Social Capital in a Collective Stressful
Situation.

7. Peter John
Social capital, networks and governmental performance in
metropolitan England

8. Michel Forse
Getting a job using social capital

9. Roxanne Silberman
Socio-economic success of immigrants' children : the role
of networks

10. Karl van Meter
Social capital research literature : analysis of key word
content structure and the comparative contribution author
names

11. Marta Ibanez Pascual
Social networks and access to employment

12. James R. Elliott
The Nested Dilemma: Job Matching and Earnings Attain-
ment among Low-Status Workers in Poor and Non-Poor
Urban Neighborhoods

13. Scott Seibert and Maria Kraimer
Social Network Heterophily and Career Success: Test of
a Mediated Model

14. Ross Gittel and Phillip Thompson
Structural Holes and Social Networks in Inner-City De-
velopment

15. Daniel Maman
The Organizational Connection: Social Capital and the
Career Expansion of Directors of Business Groups in Israel

16. Henk Flap, Patrick Flerackers, and Frits van Uxem
The Success of Small Business Foundings in the
Netherlands. Effects of Human and Social Capital and the
Liabilities of Newness and Smallness.

17. Monica Higgins
Changing Careers: A Study of Social Capital

18. Peter Abell
Understanding Social Capital

blo - Sunday May 31, 09:00 - 10:30

Blockmodels

Organizer: Patrick Doreian

1. Patrick Doreian
Boundary Effects on Blockmodels

2. Tamas Rudas, Vladimir Batagelj, Anuska Ferligoj

Blockmodeling valued networks

3. Patrick Doreian, Vladimir Batagelj, and Anuska Fertigoj
Partitioning methods for ranked clusters models

gen - Friday May 29, 15:00 - 18:00
Gender, work, and networks
Organizer: Bonnie Erickson

1. Margarita Mayo
Gender Diversity in Work Groups: Effects on the Density and Centralization of the Group Communication Network
2. Anna-Maija Castron
Spouse and profession in the formation of social networks in Helsinki and St. Petersburg
3. Bonnie Erickson
Women doing real men's work: networks and the segregation/ integration of women in the male-dominated world of private security
4. Felix Requena-Santos
Gender, Social Networks and academic success
5. Mary C. Still
Gender, Life Course and Employment Considerations in Networks

met - Friday May 29, 15:00 - 18:00
Methodology
Organizer: Martin Everett

1. M.G. Everett and S.P. Borgatti
The Centrality of Groups and Classes
2. Bart Nooteboom and Gabor Peli
Spheres and networks
3. John P. Boyd
Cellular Automata and the Evolution of Moiety Kinship
4. Antero Kiiänmaa
Contextual analysis of network centrality
5. Alessandro Lomi & Phillippa Pattison
Multivariate p^* models of producers' market structure

qua - Saturday May 30, 15:00 - 18:00
Quality of network data
Organizer: Anuska Fertigoj

1. Bruce C. Straits
An Experiment in Varying the Wording of Personal Network Name Generators
2. Jennifer Stewart
Informant accuracy revisited
3. Anuska Fertigoj and Valentina Hlebec
Evaluation of Social Network Measurement Instruments by Meta Analysis of MTMM experiments
4. R.B. Rothenberg, M. Brown and C. Sterk

Validation of respondent-reported information about relationships between named partners

5. Danching Ruan
The Content of the GSS Discussion Networks:
An exploration of GSS discussion name generator in a Chinese context

exc - Saturday May 30, 15:00 - 18:00
Exchanges in personal networks
Organizer: Alexis Ferrand

1. Alexis Ferrand
Types of Regulations of Exchanges
2. Blandine Mortain
Transmissions of objects in family networks :
an analysis of the triadic dimension of a social exchange
3. Segolene Petite
Network structure as a factor of choosing exchange
4. Nan Lin
Social Exchange: Its Rational Basis
5. Emily M. Agree, Ann E. Biddlecom, and Ming-cheng Chang
Intergenerational Transfers as Generalized Exchange in Taiwanese Families

sta - Saturday May 30, 08:30 - 18:00
Statistical network models
Organizers: Ove Frank and Tom Snijders

1. Jan Hagberg
Testing centrality in social networks
2. Jukka Corander
Aggregation of social structures for flexible observation schemes
3. Ingegerd Jansson
A popularity model for social networks
4. Wouter de Nooy
The Sign of Affection
5. Phillippa Pattison, Stanley Wasserman, Garry Robbins, and Alaina Michaelson-Kanfer
Statistical evaluation of algebraic constraints for social networks
6. Tom A.B. Snijders, Marijtje A.J. van Duijn, and Evelien P.H. Zeggelink
Specification of actor-oriented models for network evolution
7. Steven K. Thompson
Making estimates with link-tracing designs: some design and model based methods
8. Ove Frank
Prediction of the sample size with link-tracing sampling designs
9. Bradley Crouch & Stanley Wasserman

Fitting p^* : Monte Carlo Maximum Likelihood Estimation

10. James Moody

A General Method for Creating Approximate Random Networks with Complex Structural Constraints

11. JiQiang Xu and Kenneth A. Frank

The estimation and interpretation of parameters in spatial autoregression models.

12. Kenneth A. Frank & Kyle Fahrbach

Specification and Estimation of Dynamic Systems Including Social Network Data

13. Roger T.A.J. Leenders & Malcolm M. Dow

Network autocorrelation models: estimation and mis-estimation of the effects and disturbance models

hea - Friday May 29, 09:00 - 13:00

Health, health care and social networks

Organizers: Jane Holschuh and Bernice Pescosolido

A: Systems of Care

1. Craig Anne Heflinger and Denine Northrup
Measuring Changes in Mental Health Service Coordination in Managed Mental Health Care for Children and Youth

2. Michael O. Calloway and Joseph P. Morrissey
Service Availability and Accessibility for Homeless Persons with Serious Psychiatric and Substance Abuse Disorders: Results from 16 US Cities

3. Joseph P. Morrissey and Michael O. Calloway
Detecting Multiple Levels of Integration in Mental Health Services Networks

B: Network Theory and Health Behaviors

4. Bernice A. Pescosolido, K.M. Lubell, M. Alegria, M. Vera, and R. Gibbons
Family networks at the intersection of community and treatment systems: lessons form and for network theory

5. Jane Holschuh
Building a theory of social networks and formal care: does network orientation play a role?

6. Catherine Kohler Riessman
Social network constraints: stigma and infertility in South India

7. Myrra Vermooij-Dassen, Bart Osse, Berna de Vree, and Jan van Doremalen
Needs of cancer patients and their primary caregivers for assistance in social functioning by health care professionals

coh - Sunday May 31, 11:00 - 13:00

Cohesion and solidarity

Organizer: Eugene Johnsen

1. Karin Sanders
Employment relations, informal networks and absenteeism within an organization

2. Robert Auger
Group solidarity in tropical Africa

3. Katherine Faust, Barbara Entwisle, and Ronald R. Rindfuss
Household Agricultural Networks and Migration in Nang Rong, Thailand

4. Twiggy Ortegon
The 'function' of the gossip network

vis - Sunday 08:30 - 13:00

Communication and exploration: Issues in network visualization

Organizers: Patrick Kenis and Dorothea Wagner

1. Helen Purchase
Graph layout aesthetics and their application to the visualisation of social networks

2. Cathy McGrath & Jim Blythe
An empirical investigation of users' inferences from graph layouts

3. Lothar Krempel and Thomas Pluemper
The Dynamics of International Economic Integration : Locations of Change in International Trade identified with Multivariate Estimates of a Series of Gravity Models and Visualisations of their Error Terms

4. Ulrik Brandes, Patrick Kenis, Volker Schneider, and Dorothea Wagner
Towards effective network visualization

5. Andrej Mrvar and Vladimir Batagelj
Drawing genealogies

6. Noshir S. Contractor, Mike Chan, and Dan Zink
IKNOW: A tool to visualize, assist, and study the creation, maintenance, and dissolution of knowledge networks

7. Carter Butts
Three-Dimensional Visualization of Network Data Using Existing Technologies

8. Greg Stephens
Network Visualization using VRML - A prototype

pol - Saturday May 30, 08:30 - 16:30

Policy networks

Organizer: Thomas Koenig

1. Daniel Carpenter, Kevin Esterling, and David Lazer
The Strength of Weak Ties in Lobbying Networks: Evidence from Health Care Politics in the United States.

2. Dimitris Christopoulos
Socio-Political Networks in Scotland and Crete: The Significance of Value Concordance Actor Interaction

3. Tracy Burkett & John Skvoretz
Political Support Networks Among US Senators: Stability and Change from 1973 to 1990

4. Vernon Murray
Activist Conflict Networks

5. Joerg Raab
What do networks tell us about politics?

6. Narciso Pizarro
A Structural Analysis of Spanish Power Elite during the Transition to Democracy Period (1975-1981)

7. David Rowlee & Karin Willert
Soviet Political Coalition Dynamics During the Brezhnev Era: A Social Network Perspective

8. Victor Kuo
Policy Networks and Judicial Decision-Making: The Case of School Finance Reform in Kentucky, USA.

9. Wouter van Rossum
Institutional and network determinants of decision making in Intensive Care Units

10. Jorge Gil-Mendieta and Samuel Schmidt
A dynamic analysis of the Mexican network of power

11. Larissa Adler-Lomnitz and Jorge Gil-Mendieta
Networks of lawyers and economists and the introduction of the new liberal policies in Mexico.

org - Thursday May 28, 08:30 - 16:30, Friday, May 29, 08:30 - 18:00

Organizational networks

Organizers: David Krackhardt and Emmanuel Lazega

A: Inter-organizational networks

1. Ranjay Gulati and James D. Westphal
The dark side of embeddedness: An examination of the influence of direct and indirect board interlocks and ceo/board relationships on interfirm alliances

2. Ha Hoang
The evolution of network relations in the biotechnology industry

3. Emanuela Todeva
Business networks and co-operative strategies based on inter-organizational dependencies: a review of the reserach agenda

4. Rosemary B. Bryant
Social Networks: Patterns of Interpersonal Communication Opportunities Among Corporate Donors in University Settings

5. Ruth Aguilera-Vaques
What Shapes Patterns of Intercompany Relations in Italy and Spain? A Historical Institutional Interpretation.

6. Raffaele Corrado
Social structure and corporate ownership: assessing the links between interlocking directorates and intercompany shareholdings.

7. Christofer Edling and Rickard Sandell
Migration on the Stock-Market: A Network Analyze of the Infectiousness of Corporate Behavior

8. Jean Tillie and Meindert Fennema
The Turkish community in Amsterdam: a network analysis

B: Intra-organizational networks

9. Markus Vodosek
Torn apart: role conflict and informal intra-organizational networks

10. Emmanuel Lazega
Generalized Exchange and Economic Performance Outcomes: Social Embeddedness of Labor Contracts in a Corporate Law Firm

11. William B. Stevenson, Jean M. Bartunek, and Stephen P. Borgatti
Structural Embeddedness and Change Within Organizations

12. Hanna Lehtimaeki
Social network analysis: practical implications for managers

13. David Lazer and Daniel Carpenter
"Where You Stand Depends on Where You Sit": The Structure of Social Influence within Bureaucracy

14. Losego P., Alcaraz J.-M., Domenech.M, Falgu S M., Menoyo D., Pastor N., Tirado F.-J.
Networks and innovation processes in organizations

15. Martine R. Haas
Building social networks: Integration through international manager transfers in multinational corporations

16. Henk Flap, Beate Voelker, and Bert Bulder
Dimensions of social capital job satisfaction: an analysis of two intra-organizational networks

17. Americo Cicchetti
Networks of relations and hospital ward units

18. Merja Karkkainen
Analyzing teams as network builders: a study of network contacts in elementary school teacher teams

19. Diego Maria Macri and Maria Rita Tagliaventi
Organizational inertia and social network in a small-medium firm

20. Tai-Young Kim
Are mutualistic cooperations always beneficial? -In terms of direct and diffuse mutualism

21. Herminia Ibarra
Identities and interactions: Social identity processes and network dynamics

22. Richard Bell
Structural social psychology and the internal dynamics of organizational decentralization

23. Carlos Lozares, Joel Marti, Joan-Miquel Verd.
The trained networks at a medium-size firm of textiles

24. Daniel Carpenter
Networks of Cooperation and Attachment in Bureaucracy: Co-Publication and Tenure at the U.S. Department of Agriculture 1890-1920.

hie - Saturday May 30, 11:00 - 13:00
Hierarchies in markets
Organizer: Alessandro Lomi

1. Alessandro Lomi and Andrea Lipparini
Autonomy, constraint and differentiation in inter-organizational fields
2. Rakesh Khurana
Executive Search Firms and CEO Search
3. Salvador T. Porras
Collaboration between Firms: The Case of Australian Networks
4. Michel Grosseti
Local networks of firms and individual networks

per - Sunday May 31, 09:00 - 12:30
Advances in the study of personal networks
Organizer: Chris McCarty

1. Barry Wellman, Ken Frank and C. Kaukinen
A Multilevel Analysis of Social Support in Personal Networks
2. Jos de Haan
Cultural networks
3. Joung-Im Kim
Network accessibility and dyadic personal networks
4. Pamela A. Popielarz
The Relationship Between Homophily and Multiplexity in Personal Social Networks
5. Steven Green
Normative Versus Instrumental Functions: Evidence of Social Network Differentiation among Rural Kenyan Men
6. Christopher McCarty
Comparing two methods of estimating network size using a national random sample

pro - Saturday May 30, 15:00 - 18:00
Networks and professions
Organizer: Josep Rodriguez

1. Daniel P. Carpenter and David Lazer
Networks of Professionalism and Attachment in Bureaucracy: Scientific Associations and Collaboration at the U.S. Department of Agriculture, 1890-1920
2. Ken Shin
The Rise and Fall of Network Structures in Popular Music: The Case of Composer-Singer Relationships in Korea, 1940-1995
3. Monique Vervaeke
Access to the labor market for in-house industrial designers
4. Wesley Shrum and Patricia Campion
Are Developing Country Researchers Isolated?
5. Arturo Rabade y Herrero

On-the-job learning: the case of networking skills

ins - Friday May 29, 15:00 - 18:00, Saturday May 30, 08:30 - 13:00

The problem of institutions: cooperation in exchange and evolution
Organizers: Thomas Schweizer and Douglas White

1. Siegwart Lindenberg
From networks to sharing groups: A theoretical re-orientation
 2. Joachim Goerlich
Old dilemmas, new games: Colonial transformations of violence in Melanesia
 3. Joerg Helbling
On some shortcomings of New Institutional Economics in conceptualizing political phenomena in non-state societies
 4. Hartmut Lang
Institutional change and public participation: The transition from communal to private land ownership in Rehoboth, Namibia
 5. Michael Bollig
Networks of support, networks of dominance: Exchange and power in two pastoral societies
 6. Michael Houseman
Embedding exogamy: A network approach to collective marriage prohibitions
 7. Duran Bell and Silvia Casasola
Colonial incorporation through affinal networks: Guatemala 1600-1821
 8. Thomas Schweizer
From reciprocity to market exchange: Identifying and explaining institutional change
 9. Veiga I, Auricoste C, Albaladejo C, Duvernoy I, Santos de Assis W.
Local and Professional networks in small-scale agriculture considering history in development actions. Case studies in France and Brazil.
 10. Douglas R. White, Michael Schnegg, and Lilyan A. Brudner
Social networks, egalitarian institutions, and wage economy: Compadrazgo in rural Tlaxcala
 11. Christine Avenarius
Chinese Community Organizations in a Postsuburban World: The Emergence of a "Virtual" Chinatown
 12. Peter S. Bearman, Michael Savage, and Katherine Stovel
Merging careers and institutions: network models of spatial mobility in Lloyd's Bank, 1900-1940
-
- pos - Thursday May 28, 09:00 - 16:00
Friday May 29, 08:30 - 10:30
Social capital in post communism
Organizer: Endre Sik

A: POLITICS

1. Andrej Rus and Hajdeja Iglic
Political transition and elite adaptation: Networks of new and old elites in Eastern Europe

2. Barnabas Gero
Institutionalization of Judicial Review in Hungary, 1990-1996.

3. Balazs Vedres
Bank and Power

B: COPING

4. Beata David
The personal network system of two socially deprived populations (the unemployed and the Gypsy)

5. Laszlo Letenyei
Peasant Networks - Network analysis in a post-communist rural society

6. Markku Lonkila
Continuity and change in social networks of St. Petersburg teachers, 1993-1996

7. Endre Sik
The Role of Network Capital in Migration - From Common-place to Result

C: LABOUR MARKET

8. Valery Yakubovich and Irina Kozina
The Changing Significance of Ties. An Exploration of the Hiring Channels in the Russian Transitional Labour Market

9. Yanjie Bian
Institutional Holes and Job Mobility Processes: Guanxi Mechanisms in China's Emergent Labor Markets

D: STRUCTURE OF PERSONAL NETWORKS

10. Robert Angelusz and Robert Tardos
Social networks and transformation in Hungary: a shift from strong to weak ties?

11. Fruzsina Albert
Friendships and the Transition in Hungary

E: COMPARATIVE POST-COMMUNISM

12. Claire Wallace
Spending, Saving or Investing Social Capital : the Case of Shuttle Traders in Post-Communist Central Europe

13. Richard Rose, William T. Mishler, and Christian W. Haerpfer
Social Capital in post-Communist Societies

evo - Thursday May 28, 08:30 - 13:00

Evolution of social networks

Organizers: Frans Stokman and Pat Doreian

1. Claire Widdart
Evolution of social networks and processes of social integration

2. Allison Young, Regena Fails-Nelson, Gunilla Holm, and Lynn Nations Johnson
Dementoring as a social networks

3. Ainhoa de Federico de la Rua and Alexis Ferrand
Comparison of network characteristics of distant quasi-synchronic personal friendship networks.

4. Ainhoa de Federico de la Rua and Tom A.B. Snijders
Establishment of friendship networks among ERASMUS students

5. Hiroshi Hiramatsu, Frans N. Stokman, and Evelien P.H. Zeggelink
The influence of individual characteristics on the evolution of friendship networks in Japan

6. Evelien Zeggelink, Hiroshi Hiramatsu, Frans Stokman, and Marijtje van Duijn
Friendship formation over time among sociology students: A comparison between Japan and the Netherlands

7. Andreas Flache
How does individual altruism shape solidarity networks?

8. Norman P. Hummon and Patrick Doreian
Individual and Group Structural Balance Processes

sup - Saturday May 30, 08:30 - 13:00

Social support networks

Organizer: Theo van Tilburg

1. Karen Klein Ikkink and Theo van Tilburg
Broken ties: reciprocity and it's effect on the ending of older adult's relationships

2. Amy Knowlton and Carl Latkin
Network characteristics as predictors of informal caregiving for injection drug users affected by HIV/AIDS

3. Romney Norwood and Linda Burton
The impact of welfare reform on social support and exchange networks

4. Karen E. Pettigrew
Only for emergencies

5. Theo van Tilburg and Dorly J.H. Deeg
The confidant in the personal network

6. Andreas Borchers
The Sandwich Generation: Measuring Quantities and Qualities in Support Networks of the "Generation in the Middle"

7. P. Douglas McConatha and Jasmin Tahmaseb-McConatha
Computers as a Mechanism of Social Support

8. S. Susan Su and Felicia Gray Carbone
Social Support in Individuals with Psychopathology: Structural Components and Their Effects on Psychological Well-being

dif - Friday May 29, 08:30 - 13:00

Diffusion of innovations**Organizer: Thomas Valente**

1. Alexandre Steyer and Jean-Benoit Zimmermann
On the frontier: structural effects in a diffusion model based on influence matrixes
2. Vincent Buskens
A New Model for Information Diffusion in Heterogeneous Networks
3. Hyojoung Kim
The Diffusion of Ideas:
An Event History Analysis of the Diffusion of Protestantism in SW Germany, 1518-1534
4. Lothar Krempel and Michael Schnegg
Exposure, Networks, and Mobilization: The 1848/49 Revolution in a small German Town
5. Lene Levy-Storms and Steven P. Wallace
Diffusing Preventive Innovations: Health Communication Networks and the Adoption of Mammography Screening Among Older Samoan Women.
6. Diego Maria Macri and Maria Rita Tagliaventi
Innovation and social network: how a change in the social network can lead to the failure of an innovation in a small-medium firm.
7. Maurizio Sobrero and Steven White
The market of innovation: a relational analysis of the Chinese Pharmaceutical Industry 1985-1994.
8. Mei Songlin
A network approach to the diffusion of analogy cellular mobile communication systems in China

3. Paco Molinero
The passions and the relational management of social disparity
4. John Skvoretz, Murray Webster, and Joseph Whitmeyer
Status Orders in Task Discussion Groups
5. Ann Mische
Crossing the Civic Arena: Contexts of Youth Activism in the Brazilian Impeachment Movement.
6. Giuliane Mandich
Disembodied Intersubjectivity. Social networks, space and experience.
7. Discussion by Harrison White

SUNBELT XVIII and 5th EUROPEAN
INTERNATIONAL CONFERENCE ON SOCIAL
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Departament de Sociologia
Universitat de Barcelona
Diagonal, 690

08034 - Barcelona
Fax: 34 3 2802378
Tel: 34 3 4021804

e-mail: nagar@riscd2.eco.ub.es
<http://www.ub.es/sociol/nagar.htm>

com - Saturday May 30, 08:30 - 10:30
Computer networks and social networks
Organizer: Barry Wellman

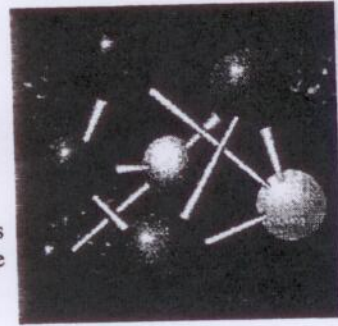
1. Alf Rehn
Warez Do You Want To Go Today? Anarchistic competition and the warez scene
2. Michael Schnegg
Lost in CyberSpace? Spatial Proximity and Community Formation on the Internet
3. Emmanuel Koku, Nancy Nazer, and Barry Wellman
The invisible college goes online
4. Keith Hampton and Barry Wellman
Netville, glocalization, and civic society

lan - Sunday May 31, 09:00 - 13:00
Micro-interaction and dominance and language
Organizer: Harrison White

1. Christine Avenarius and Jeffrey C. Johnson
When Art Imitates Network Theory: A Look at Bounded Groups as Depicted in Films, Literature, and History
2. David Gibson
Talking Structure

Ties & Bonds

Ties & Bonds is a regular column written by Barry Wellman. The contents of this column are solely determined by Barry Wellman and do not necessarily reflect the opinions or concerns of INSNA. Contact Barry at wellman@chass.utoronto.ca.



BBS

The legendary Chicago double play combination reunited in Cambridge: **Joe Galaskiewicz** (Soc, U Minn) spent spring, 1997 at Harvard where Peter Marsden is Soc chair.... **Jill Suitor** and **Scott Feld** (both Soc, LSU) spent Fall, 1997 at U Toronto (Inst for Human Development & Centre for Urban & Community Studies respectively)....**Tom Valente** (Hygiene, Johns Hopkins) running for Vice-Chair of the Int'l Communic Assoc's Communic & Technology division.... **Dean Behrens** (Soc & Dec Sci, Carnegie Mellon) appointed to tenure-stream position Soc, U Toronto [dbehrens@chass.utoronto.ca]. He also received his PhD (Kathleen Carley, supervisor)...Krackplotter **Jim Blythe** had finished his Comp Sci Ph.D. at Carnegie Mellon and moved to LA's Info Sci Inst. [blythe@cs.cmu.edu].... **Rebecca Adams** elected president of Southern Sociological Assoc.... **Steve (S.D.) Berkowitz** spending the 1997-1998 sabbatical year as Visiting Prof of Soc, Univ of Fort Hare, Eastern Cape Prov, South Africa. The university is the alma mater of Pres. Nelson Mandela. **Terry Berkowitz** will be curating with the museum there **Peter Bearman** from Chapel Hill to Soc, Columbia U, 1/98.... **Noshir Contractor** spending the year away from Communic, U IL as a visiting scholar at Annenberg Schl of Communic, U Penn.... **Barry Markovsky** (U Iowa) appointed Co-Director of (US) National Sci Fdn's Soc program, 1/98. He'll keep teaching at Iowa via the Web.... **Phil Agre** tenured at Communic, Cal-San Diego. Phil's

Red Rock Eater rebroadcast service is my favorite way for keeping up with the socially-conscious aspects of cyberland.... **Barry Wellman** (Soc, Toronto) appointed "Virtual Community and Environments" focus group leader for SIGGROUP of the Assoc for Computing Machinery. He's also the 1st academic to have his picture mounted among the entertainment stars in Toronto's legendary "The Bagel" restaurant — just to the left of Hervé Villechause, the late resident of *Fantasy Island* who had his ear closest to the ground.

New Social Network Analysis Journal

In April 1997, Steve Berkowitz (for address see above) announced plans for a third social network analysis journal, with Steve, Al Klovdahl and Alvin Wolfe as the editors. It would be called *Structural Analysis: A Journal of Theory and Substantive Social Research*. It will be marketed through INSNA, as *Social Networks* now is. In January, 1998 Steve reported that this is an ongoing project and that he is soliciting articles. Philip Van Tongeren, the publisher, reports that Vol 1, # 1 should come out, Spring, 1998.

American Sociological Association Stuff

(Altho INSNA works really hard at being multi-disciplinary and multinational, American sociologists are probably our most represented category. Thus it's not surprising

that the ASA shows up so often here. In addition, I belong to the ASA [indeed, am a double apparatchik there], so I hear about its doings. If you want your discipline and country to be mentioned here, please send me your news.]

The Elect: In addition to moving to Princeton, **Alex Portes** has been elected Pres. of the Am Soc Assoc. **Mike Schwartz** (SUNY-Stony Brook) has been elected to the ASA's Cttee on Publications while **Victor Nee** (Cornell) has been elected to the Cttee on Nominations....

The Honoured: **Bonnie Erickson's** (U Toronto) paper on cultural capital in the private security industry won the Best Paper Prize of the ASA's Soc of Culture section.

Andre Gunder Frank (Soc, U Toronto) won the "Career of Distinguished Scholarship Award of the ASA's Pol. Economy of the World System section.

William Carbonaro (U Wisc) won the ASA's Soc of Educ Best Grad Student Paper award for "I get by with a little help from my friends' parents? Family structure, social capital & effects on educational outcomes."

John Logan & Glenna Spitze (SUNY-Albany) won the ASA's Family section Book award for *Family Ties: Enduring Relationships between Parents & Their Children* (Phila: Temple U Press).

Joe Feagin & Hernan Vera (U FL) won the ASA's Racial & Ethnic Minorities section's Award for distinguished Anti-Racist Scholarship for *White Racism: The Basics* (Camb. U Press).

Steven Pfaff (U NC) won the ASA's Comparative Historical Soc section's award for best Graduate Student Paper for "Collective identity and informal groups in revolutionary mobilization: East Germany in 1989 (*Social Forces* 75, 1996).

The Wannabes: **Joe Feagin** (U FL) has been nominated for president of the ASA and **Nan Lin** has been nominated for Vice

President. **Richard Alba** (SUNY-Albany), **Mel Oliver** (UCLA & Ford Fdn) & **Ivan Szelenyi** (UCLA) have been nominated for Council. **Michael Burawoy** (Cal-Berkeley), **Dan Clawson** (U Mass) & **John Logan** (SUNY-Albany) have been nominated to the Committee on Publications. **Sam Cohn** (Texas A&M) & **Doug Heckathorn** (U Conn) have been nominated to the Committee on Nominations.

Frank Gets What He Deserves

Frank Harary (Math, U New Mex) has received his 4th honorary doctorate. The award citation said in part, "You are known as 'the father of modern graph theory' for work that has brought this field to its present importance and vitality in contemporary mathematics. More than 700 professional publications testify to your prodigious research productivity. Your applications of graph theory to anthro, biology, chem., comp sci, soc, and psych, as well as your unselfish sharing of new ideas and directions of research, have benefited mathematicians and scientists worldwide." You can take advantage of all this wisdom (and wit) by taking Frank's workshop at the Barcelona Sunbelt conf.

The Ice Storm

Paul Bernard (Soc, U Montreal) & **Bob Milardo - Renate Klein** (Fam Studies, U Maine) were the only network analysts I know who were affected by the ice storm that affected Quebec, Eastern Ontario (not Toronto) and Maine in early January. (For the 1st week, CNN only reported the Maine-US damage and while the Canadian Broadcasting Co. only reported Quebec and Ontario.) Paul Bernard, in central Montreal, was OK for a while but several days into the storm his home lost electric power. I understand that the U Montreal also shut down, as did all central Montreal organizations, to conserve what little

power was available on a damaged, overloaded main delivery system. Bob Milardo turned his predicament into a moving account, which I am pleased to reprint here (by permission):

~ ~ ~

From the Ice Lands
By Robert Milardo, Jan, 1998

Day 7: As for most folks, we have been without power for 7 days and still counting. We breach 19th century living without the training manual. We cook on a camp stove, carry in snow to melt for water, heat with a fireplace, take showers at the Y, and watch carefully where we place candles and lamps. Lamp oil and propane canisters are at a premium here. Priorities change to meet the new century.

Saturday we went over to our neighbors, Don and Liz, to watch the house next door burn down. It was strange to sit there, make coffee on the wood stove, drink out of china cups, chit-chat, and occasionally lament over the total loss. The house next door was just a few 100 yards away, across a snow covered field. At times it was not possible to see through the thick blankets of smoke which poured forth and perfectly blended with the snows, as if all was white and harmless. Then just as easily the blankets withdrew, and the flames sliced into the icy skies.

During the ice storms, we went for several walks about our fields and forests. As the rain fell it immediately froze onto the first surface it hit whether tree or ground. It froze with a tinkling sound, like the pieces of a cut glass chandelier in a wind. I had never heard anything like it before. Immediately after the storms the sounds changed to boom and crash of breaking trees; we lost about 100, mostly birches and poplar but also pines, oaks, beach, elms, and cherry. Most were broken near the crowns leaving tall, limbless sentinels, now without purpose, but soon to be snags — homes of next spring's flickers and sapsuckers.

On Saturday and Sunday the temperature warmed to near 40 and the sounds of the forest changed again to falling ice from the trees. Catastrophe and windfall continue in an eerie union. Last night we came home from work to a

freezing house, immediately got the fires going to slowly warm the living rooms and ourselves, and settled into a dinner of take out Indian foods, and the Sunday *NY Times* by oil lamp. Freely moving in and out of the catastrophe without thought. Our visit to the last century continues before we take on the next.

Day 8: I'm beginning to dream in incandescence. Renate believes we should think of ourselves as power impaired rather than powerless.

Day 9: The house is cold again. The folks at Bangor Hydro (Electric) called, actually Diane — we're now on a first name basis. Diane wanted to know how we were doing and if our power was on. I looked across the fields and could see Henry's house lit up. It was about 9pm and the whole of Lindsey Road had power but for some reason we did not. Diane suggested I check the breaker in the house, and the fuse directly on the line outside, then call her back. I did. It was the fuse, a huge chunk of ceramic high on the first of our many utility poles. There it was hanging useless, but somehow suggesting more. It seemed to be pointing into the night sky due south.

Diane called back for a report and to see if we were warm enough. I gave my report, briefly. "Can you please have our power returned, Diane?" She said she'd do the best she could and report the problem to the dispatcher. And, then offered some unsolicited advice electing herself to the position of utility guru — "Now we really can really appreciate how important electricity is to us." This counsel deserved serious reflection, I said my good-byes and reflected.

Now I understand this is all a morality play.

Day 10: This is the first day of the ninth year of the fifth decade of my life. Renate gave me a beautiful book of trout art, and one of trout poems. The poetry is signed by the author and the binding was hand stitched in Stuben Falls, where I suspect they have lots of power. The art book includes paintings of all the subspecies of north American trout: brook trout, sunapee trout, Dolly Vardin, bull trout, and so on. My favorites are the Arctic Dolly Vardins, especially in their electrifying spawning crimsons. Tonight we will be going to a rock concert to celebrate. Renate wants to hear electricity scream. I want to breathe rhythm guitars.

It's starting to snow. White snow.

Day II: We celebrate the festival of the lights, and went out for dinner, but uncharacteristically left all the lights on. We had Cajun food, and Renate had her first reptile ever. We asked the waiter to remove the candle from our table, for the moment there is nothing romantic about candles. We like things with switches.

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### **The East Asian Market Crisis — Where Networking Has Moved from Being a Boon to a Bogeyman**

Until the summer of 1997, I'd spent 10 years reading that the key to the East Asian "tiger" nations' economic success was the tight networks among the elite. They worked on trust and longterm paybacks. Here's one of many accounts (from *The Economist*, 8/95) that I've collected: "Japan, for example, is frequently accused of lacking clear rules, and of operating instead through chummy personal networks that discriminate against outsiders." The article cites a survey that in Japan 39% of the populace favored friends before rules as compared to only 5% in the US, 8% in Germany and 17% in Britain.

Yet all I read in the newspapers now is that the current East Asian economic crisis came about because cronyism distorted the free operation of markets, channeling funds into uneconomic investments. Everything that was good is bad again now. The accusation and the Int'l Monetary Fund's proposed solution is strange: The East Asian banks got much of their loan funds from US megabanks — Morgan, Citibank, etc. — presumably these badly-secured loans were also the product of crony networks. The IMF's policies are designed to protect the US banks' loans, and even more, to open up the East Asian countries to "free enterprise" — which in this case means Western corporations buying local enterprises at bargain basement prices (because of the currency devaluations and the enterprises' lack of working capital). As US

Sec. of State Madeleine Albright says, "We're a major part of the IMF and have substantial voting power" under its weighted voting system." (*NY Times*, 20 Jan 98: C3).

In such interventions, the national elites may not do as well as they have in the past, but as PK Luis (HK Poly) points out to me, many become compradors — intermediaries between the outside financial elites and their own countries. Those who get hurt in these structural shifts are the working and middle classes as they experience massive unemployment and loss of purchasing power. Remember the decade-ago debate about the role of finance capital? The resolution of this crisis suggests that Western finance capital continues to have huge power. Indeed, Nathan Keyfitz tells me that US Sec. of the Treasury Rubin (ex Merrill Lynch, I believe) could respond to Jim Lehrer's questions about why the US/IMF "should bail out the perpetrators of the crisis" only by saying "We have to do it." (*Lehrer Report* PBS-TV interview, 16 Jan 98.)

My tentative prediction is that we shall soon experience the coincidence of two opposing trends. The first trend is the globalization of capital, climaxing by worldwide ratification of the Multilateral Agreement on Investments (MAI) that enshrines and institutionalizes the unfettered, unregulated flow of capital globally. Along with the usual suspects at *The Wall Street Journal*, folks who believe in liberation through computer networks have been proclaiming the triumph of globalization. (Read any recent issue of *Wired* magazine.)

The second trend is the growth of nationalist/regionalist moves to dissolve globalism. The recently-implemented bullying behavior of the IMF/Western (and especially US) financial interests towards their East Asian political economies may lead the East Asian regimes to distrust their previously comfortable place in global networks and withdraw into protectionism and anti-Westernism. This coupled with the possible defensive

*cum* offensive pulling back of Japanese and Hong Kong capital from the West — where it has contributed substantially to the buoyancy of Western stock, bond and currency markets — could produce a major crisis of disinvestment. This, in turn, could lead to the loss of international stability where suspicious blocks replace the currently globalized political economic situation. Concomitantly, the loss of jobs — first in East Asia and then in the West — could lead to major social unrest and the loss of community. To be sure, there are a lot of “could’s”.

Let’s turn to something more solid: When my (late) science-fiction friend Judith Merrill was asked to predict the future, she answered, “Mad Max.” Are the MAI, the IMF and Mad Max conceded by more than the letter “M”? More prosaically, I wonder if we shall regress to disconnected clumps of densely-knit networks at both the inter-national and local levels. Dammit, I *want* the strength of weak ties interconnecting us.

### Will Computer Networks Generate A New Savonarola?

A recent article by William McNeill resonates with my thoughts just above: “What is happening globally today resembles European experience in the Renaissance and Reformation era. In the Western Europe of that age, Renaissance worldliness found itself pitted again reinvigorated Christian faith; and this happened at a time when rural communities were being rapidly incorporated into market networks that damaged village solidarity and disrupted moral rules. Religious controversies attracted by far the strongest popular and political responses: but the appeal of the Renaissance style of secular rationalism was never entirely suppressed, even among the most impassioned theologians.

“Something similar may be happening on a global scale as our millennium approaches its close. Energetic religious reaffirmation or

conversion to new (often ecstatic) faiths is spreading rapidly. At the same time, traditional village communities no longer provide a satisfactory way of life for the majority of human beings, as was always the case before in its civilized history. Emotional intense religious sects ... cannot reproduce the values and social solidarity of village communities in their entirety; but they do provide moral guidance and mutual support for their members, even, or especially, for the millions who have migrated from impoverished villages into city slums in search of a better life.” [BW: But Clyde said they all were doing the Kalala dance.]

“But the same intensified communications that have penetrated the world’s villages, making local self-sufficiency impractical, also sustain an ever-denser web of exchanges among civilizations. Those who engage in such communication expose themselves to the rest of the world, willy-nilly. Ideas and attitudes are inevitably affected, and vested interests in the continuance of such exchanges grow. They coexist awkwardly with the need of displace and uprooted persons for a secure moral community, rooted in local religious affirmation or confirmation. And just as religious firebrands of the Reformation used Renaissance techniques of rhetoric and historical criticism to reinforce their version of saving truth, so in our time do religious fundamentalists exploit the techniques of mass communication.... With luck, humanity may continue to muddle through.... If so, the networks of global communications and encounters among different civilizations that those networks sustain will surely deserve some of the credit. Perhaps new, non-confrontational forms of moral community will arise to meet the needs of lost souls adrift in our cities. And when we remember the career and influence of Andrei Sakharov, we can reasonably ask whether professional communities may not attain enough global cohesion to moderate political antagonisms.” [“Decline of the West,” *NY Review*, 9 Jan 97: 21]

### The Adventures of Ed

**Snip:** Ed Laumann sure does poke his nose into stuff. Building upon his group's landmark *Sex in America* book, his group has reanalyzed that data to study the prevalence and effects of circumcision. In short (if I may be so bold), altho 77% of US-born men have been circumcised, there does not seem to be much significant differences in the sexual health of circumcised and uncircumcised men. However, "the researchers found that circumcised men were 1.4 times more likely to masturbate 1+/mo and were nearly 1.4 more likely to engage in heterosexual oral sex." No information on whether having a *briss* made a difference as compared to boring old doctors. Source: Summary of 2 Apr 97 article in the *Journal of the American Medical Association*, published in the *American Medical Newspaper*, 7 Apr 97.

**Getting Edgy:** Ed Laumann also appeared 12/97 in a large *NY Times* story about *The Edge*, an electronic discussion group featuring Nobel-level scientists. According to Ed, the thing that binds this network together is the participants' common link to a literary agent specializing in readable books by high-profile scientists. Ed, et al.'s *Sex in America* certainly qualifies as hard science.

### The Geneva Gig

**A Fantasy Fulfilled:** There Bev Wellman and I were, teaching network analysis in Switzerland. We were having problems getting UCINET to work. "I wish Steve Borgatti were here," I said to our students. "*He'd* get it to work."

A short, wiry, bearded man leaped into the computer lab. "I'm here, Barry," said Steve Borgatti in the flesh. "How can I help you?" The students were amazed, for I had been praising Borgatti's development of *UCINET* for the past few days.

My dream of two decades had been fulfilled. Remember that wondrous moment in *Annie Hall* when Annie (Diane Keaton) and Alvy Singer (Woody Allen) are waiting in line to see *The Sorrow and the Pity*. A pompous Columbia professor who is also in line tries to impress his girl friend by pontificating about Marshall McLuhan. Woody says, as I think we all would in that situation, "Gosh, I wish I had Marshall McLuhan here to set this twit straight." (I paraphrase here).

At that moment, Marshall McLuhan himself steps out from behind a life-sized advertising placard of himself and says to the professor, "You're wrong. My fallacy is nothing like your hypothesis."

In our case, things were a bit more planned. I had run into Steve Borgatti earlier that day. He (and Russ Bernard) were in Geneva to teach courses about qualitative analysis just as Bev and I were teaching an intensive one-week intro. to network analysis the previous week.

**Tying Swiss Bonds;** We were all in Geneva as part of *Suisse La Demain*, an ambitious 3-year program to move Swiss social sciences forward. (Because Switzerland is not part of the European Union, they have been feeling left out of European collaborative social science development. However, the Swiss social science that I saw seemed quite good.) As part of this collaborative program, the Swiss were holding a series of one week, ICPSR-ish, workshops in social scientific methodology. These were open only to selected doctoral students. In Switzerland, like most places in Europe, doctoral students write theses only. They don't take courses. Leading Swiss social scientists were concerned that students were not getting methodological training. (Judging by their enthusiastic and frequent participation, the 80+ doctoral students who gave up two weeks of summer also felt this way.) These one-week intensives were designed to fill the gap.

In developing our course, Bev and I built in part on our own experience in research design, participatory education, and ego-centered network analysis. We also spent two days discussing whole network analysis. (I'd love to get feedback from other network analysts about how they would approach this course.) We guaranteed (with fingers crossed) to the students that they each would have a thesis design by the end of the week. We also wanted to give them both theoretical knowledge (being lectured at) and actual workshop experience doing network analysis. Indeed, the latter had been specifically requested by the summer school organizers.

Our first day of teaching was an expanded version of the 3-hour Introductory workshop that I teach at the Sunbelt Social Network conference. I mostly lectured about ego-centered networks the second day: personal community, social support and all that. To help the students think about their own research designs, I focused on the choices and mistakes I had made with the two East York studies. Drawing upon Bev's teaching skills, we divided the students into four thematic groups in different corners of the room to get them developing approaches to studying their own research problems. The students took turns discussing their project with their group.

The third day was devoted to ego-centered network analysis using SPSS (hardly anyone knew SAS) to analyze data. We used Bev's tie-level data on the relationships of users of alternative health-care and aggregated up to the network-level. It was then we had a shock. The students had all assured us that they had had at least a year of statistics, but it turned out that this was statistical theory, taught by econometricians or statisticians. Hardly anyone knew how to do basic SPSS procedures, such as recoding, or running and reading freqs, crosstabs or regressions. So we slowed down and did the first days of Stats100. But because these students were smart, hard-working and motivated, they picked everything up quickly and were soon interpreting

Bev's data for her. (She's given them the datasets to take home and play with some more.)

All of the fourth day and some of the fifth day were devoted to whole network analysis: theory, substantive findings, and practice using the sample datasets available with UCINET and Krackplot. (Each student received a new copy of these programs, complete with manuals.) Everyone had great fun wiping out the Medici and seeing what happened to the Florentine elite network.

We finished the course by having the students present their basic thesis designs. It was wonderful to see 18 students, from 4 languages and 4 disciplines presenting and critiquing. I was fascinated by how almost all of the projects were macro and whole network — a quite different mix from the high percentage of social-support projects I usually hear about at my Sunbelt workshops. Many students wanted to study policy networks, building on Laumann, Knoke and Pappi. Several students wanted to study diffusion of innovation and were delighted to hear about Tom Valente's new book. One wanted to study how TV studios put together production deals; two social psychologists were planning to study how small-group structure affected emotions. The closest to my current work was a proposed study of online communities while another student shared Bev's interest in networks of support for low-back pain.

Although our course went well, we had some nervous moments. "We need more theory," one student said on the second day, politely but firmly. Fortunately, 5 minutes later, another student said, equally as politely and firmly, "We need more methods." Yet the students were smart, motivated, hard-working, and quick to catch on. Rumor has it that a Swiss cluster of network analysts is forming now; look for them at the Barcelona Sunbelt conference.

### Russ Gets What He Deserves and Barry Gets Surprised

Steve Borgatti was not the only person to appear to me out of nowhere. This Fall, our Virtually Social Research Network did a collective presentation to the (network-hip) *Collaboratory for Research in Electronic Work* at the U Michigan. While we were schmoozing in the hotel lobby about how to best present our mantra of "a computer network is a social network," two familiar, unexpected faces appear. Russ and Carole Bernard. The famed *Institute for Social Research* had invited Russ to be one of a short list of distinguished speakers celebrating its 50<sup>th</sup> anniversary. As his talk was scheduled at the same time as ours, I could only hope that Russ did as smashing a job as he and Peter Killworth had done for the San Diego Sunbelt keynote.

### Another Take on Recalling Frequency Data

Although I share the ISR's great respect for Russ Bernard, I've had one ongoing disagreement with him. Decade-long readers of *Connections* and *Social Networks* will recall the controversy about the usefulness of recalled frequency of contact data (where a respondent is asked questions on the order of "How frequently have you spoken with Network Member X in the past month.") Russ Bernard, Peter Killworth and Lee Sailer said it was unreliable on the basis of their studies comparing recalled data with logs of actual communications. Muriel Hammer and I were more positive, saying that even if the metric were wrong, ordinality was preserved with the more frequently contacted persons being so reported. I obviously have had a self-interest in this because my Toronto/East York studies rely heavily on such data. FWIW, both my studies and those of others have founded that reported frequency of contact correlates well with lots of other stuff such as exchanging material aid.

Veteran Seymour Sudman (Survey Res Lab, U IL) recently reviewed 30 years of developments in survey research and, to my mind, provides a useful resolution of this debate [i.e., he agrees with me]: "We do understand more about how people retrieve information from memory. More often than not they do not retrieve a stored answer, but construct one on the spot based on the information they have accessible to them.... We also understand that people asked to *report about frequent behaviors* (my italics) are typically unable to remember individual episodes and use *schemas* to estimate their behaviors. Interestingly, if the behaviors are sufficiently regular, the estimates may be more accurate than if the respondent had tried to enumerate individual episodes." ["Where We Have Been: Survey Research 1967 - 1997." *Survey Research* 28, 3 (Su/97): 6-7]

### Short Schticks

**Unsupportive Supporters:** Hearing that your newborn baby has Down's syndrome has to be upsetting, but "1/3 of all [parents'] unsupportive experiences were with ... health care professionals, mainly doctors." Many were cold and rushed, made rude comments and failed to answer questions about diagnoses and treatments. (Details in a paper by Joan Patterson, Robert Blum, et al. in the 12/97 issue of *The Journal of Developmental and Behavioral Pediatrics*.) Indeed, a Louis Harris poll of 230 US primary care doctors found that 61% felt that the medical school curriculum did not train them to communicate adequately with patients. [BW: Since when do folks need training to be humane beings?] Former US Surgeon General has even set up a new organization, the "Take Time to Talk Advisory Council". Koop says, "If parents don't feel comfortable in pursuing questions with the doctor, the don't learn what they need to know to care for their child." Patterson reports that in defense, doctors say "they only have so much time to talk to families, or that a family heard them wrong, or that it's their

job to provide the best medical information, and if families need support when they see a psychologist." And Koop reports, "Many doctors think that keeping a stiff upper lip and being austere is a support to the family." [Susan Gilbert, "Forget About Bedside Manners, Some Doctors Have No Manners," *NY Times*, 23 Dec 97: B10]

**But Stressful Doctors Can Kill You:** When women were tested after breast-cancer surgery (but before chemo/ radiotherapy), women under the greatest stress had lower levels of natural killer cells, and their immune systems responded more slowly than those who had suffered less stress. [Study by Barbara Anderson (Ohio St U), et al., reported in the *Journal of the National Cancer Inst.*, either 12/97 or 1/98. Source: "Stress May Affect Course of Cancer" *Toronto Globe and Mail* 9 Jan 98 - reprinted from *Pittsburgh Post-Gazette*].

**Publishing Opportunity: Social Networks and Health:** Bernice Pescosolido (Soc, Indiana U, pescosol@indiana.edu) and Judith Levy (Pub Health, U Illinois-Chicago, judlevy@uic.edu) have called for papers for the JAI series *Advances in Medical Sociology*, vol 8. It'll focus on "emergent and cutting edge issues in the field of social network analysis, ... [especially] papers that examine the influence of social networks on medical and health issues." Examples: "application of social network theory or techniques to health behavior; effects of peer support on health outcomes; social networks of prevention or risk; the epidemiological mapping of disease transmission, and the diffusion of health-promotion efforts within and across communities at risk. The deadline is very tight (alho you could try later): a 2 pp. abstract or completed paper to Judith Levy, Schl of Public Health, U Illinois, 2121 W. Taylor St, Chicago IL 60612-7260 [tel: 312-996-7825].

**Microstar:** "A person who becomes well-known and well-loved, but only within a small media universe such as the Web, the zine

scene, or cable access TV." [Gareth Branwyn, "Jargon Watch," *Wired* 9/97: 74].

**Nobel Economist Reveals Economics Easier To Do Than Sociology:** Gary (rational choice) Becker says he originally wanted to be a sociologist but it was "too hard". So he settled for applying economics to social problems. Becker's r.c. explanation for Bill Clinton's possible behavior with Paula Jones: "The opportunities you're exposed to in a powerful position are enormous, while the risks of being caught are very low.... My bet is that for everyone brought down [sic], there are a lot who have no trouble at all." When asked if he could use r.c. to explain the relationships that people have, Becker replied: "That's not my goal." [Christina Lamb, "Rational Choice on the Menu." *Financial Times* [UK], 2 July 94].

**Are the Economists' Days Numbered?** At every university I've ever visited — anywhere in the world — the economists ruled the social scientific roost. Not only did they have the most resources, their arrogant disdain for others has been legendary. Yet the *NY Times* (18 Sept 97: C3) has reported that corporations are turning away economists' inflated claims of forecasting "when a wide array of forecasts, none of them particularly more trustworthy than another, are readily available." My own experience these days is with management consultants whose predictions about the impact of computerization seemingly are based on what sounds good in soundbites. Take a look at an early exemplar, Alvin Toffler's *The Third Wave*, whose 1980 prognostications have been around long enough to be checkable.

**Buddha was a Network Analyst** "As a net is made up of a series of ties, so everything in this world is connected by a series of ties. If anyone thinks that this mesh of a net is an independent, isolated thing, he is mistaken. It is called a net because it is made up of a series of interconnected meshes, and each mesh has its place and responsibility to other meshes."



*nobody to take it, but I already have too much. I refuse it and ... I would not want to leave the school, I love children, I love teaching with them. But on the other hand I am very fond of the work as guide. Very fond indeed. - - I tried to work a little as organizer [at the agency] and... well, I am fond of that kind of work.*

*Interviewer: You work for some kind of firm or - - - ?*

*Larisa: This firm is controlled by Leningrad stock exchange <sup>18</sup> - - - It is a serious organization. Everyone of us who works there has received training. Five years ago we finished courses together. At the beginning [in the new firm] Vadim started as a guide. Then very quickly the political situation loosened up and he went into administration. And silently he collected us all, Raisa, Svetlana and me [to work as guides]. And still later came Galina and Ruslan, the new guides. There are now five of us - - -.*

1996

Three years later we meet Larisa again, this time in a happier marital situation. She is now living with her son and her bus-driver husband, whom she met through the travel agency.<sup>19</sup> Reading Larisa's diaries in 1996 clearly reveal the increased importance of business in her life. Though some school-related encounters are reported in her diaries they give rather the impression of the social life of an entrepreneur than that of a secondary school teacher, as evident from the following brief depiction of her business-related encounters and relations.

On the first day of the study period Larisa receives a phone call from Naina, a friend from student days and by profession a teacher and guide.<sup>20</sup> They talk about Naina's coming to town. On day two she meets Lyudmila, her close friend from schooldays, by profession 'an engineer and bank personnel consultant'. Later on the same day she phones Pavel, an 'engineer and commercial director of a building organization' who is a former colleague of Vadim, Larisa's boss at the travel agency. Larisa first met Pavel at Vadim's house-warming party two years ago.

<sup>18</sup>From the context it is difficult to conclude what kind of relation really exists between the firm and the stock exchange – perhaps shared premises or persons involved in activities in both. In 1996, however, the Leningrad stock exchange is second largest in Russia with millions of dollars daily turnover. (Anton Likhodedov, private communication).

<sup>19</sup>Larisa's bus-driver husband is originally a high school trained engineer by education. Together with teachers, engineers were one of the mass professions in the Soviet Union. Their number was even more marked in St. Petersburg, a military-industrial stronghold. It is thus no wonder that several of our respondents were married to engineers, nor that in the diaries of respondents we find several notes about 'former engineers' who were forced to change their profession because of the crisis in their former state-owned enterprises or institutes.

<sup>20</sup>It is not coincidental that there are several teachers working as guides, since they have experience in speaking in front of an audience by profession. The language teachers may be able to combine this experience with their knowledge of foreign languages.

On the evening of day three she talks again with Lyudmila on the telephone. Lyudmila tells her how to open a foreign currency account and describes the conditions applying to the account at Lyudmila's own bank. On day six she phones Mikhail, the husband of Vera, 'a former guide'. On day seven during a bus excursion Larisa talks with her colleague Anna, 'a teacher, guide, and manager at the travel agency'. On the same day she phones Larisa's teacher-colleague Marina and persuades her to go with Marina's group of children for a trip to Sweden and Finland. The next day Larisa visits the travel agency office and pays for the trip.<sup>21</sup> On the morning of day nine she receives a phone call from the bus driver Kirill suggesting a consultation with a lawyer related to Larisa's participation in the organizing of a new commercial travel route. An hour later they pay a visit to the lawyer and discuss the legal details.

On day twelve she phones a close childhood friend, Alla, whom Larisa reported in the 1993 diaries as 'seamstress'. In 1996 Alla is presented as 'seamstress-tailor, starting out in business.' They talk about business: '*On the phone I asked her the details of the work at her [newly opened] shop. I wanted to compare information received and actual work practices.*'

On day fourteen Larisa meets Svetlana during a bus excursion, a travel agency employee already reported in 1993. Three years later Svetlana has risen to be vice-director of the travel agency: '*[Svetlana] told me about the results of an advertizing trip to Cyprus; we agreed about meeting at the office to go through the material in details.*'

On the last day she meets Vadim, her boss at the travel agency. The relation has cooled over the three years and he is characterized as her 'boss and nothing more'. Larisa even feels necessary to tell her superior how the agency should be run: '*Again I had to prove that somebody must travel to Moscow immediately [to negotiate about the Visa formalities]; we are losing tourist groups and he dawdles.*'

Altogether 46% of the encounters recorded by Larisa in 1996 were related either directly to business activities or to the people dealing with or met through business (as against 23% in 1993).<sup>22</sup> The same applies to the proportion of her network members related to or mediated by the business world, which has risen in three years from 24% to 42%.<sup>23</sup>

A considerable proportion of Larisa's closest relations are involved in business life in 1996. In addition to her colleagues at the travel agency, some of her oldest relations have started to make a career in business, such as her childhood friend, seamstress-tailor-businesswoman Alla (whom she phones to swap experiences in business life) or school friend Lyudmila, a former engineer currently working as a bank consultant. It looks as if her social network functions as the distributor of the information encouraging private initiatives.

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<sup>21</sup> She will probably be recompensated by Marina who is obviously in need of an acquaintance who has both experience of working with children as well as organizing tourist trips.

<sup>22</sup> 1993: 7 meetings out of 30; 1996: 18 meetings out of 39, if two meetings with Larisa's bus-driver husband, met through the agency, are not counted.

<sup>23</sup> 1993: 9 members out of 37; 1996: 18 members out of 43. In our diaries we also asked respondents to indicate the persons through whom they were introduced to their network members. One such business-related 'middleman' was reported in 1993 and three in 1996.

Most of Larisa's relations at the travel agency build on a common past, but the business milieu also serves as the main channel of her network growth. Her new husband works as bus-driver for the agency and the couple does not seem to have particular problems with money.

Figures 1 and 2 show how the developments described above are reflected in the structure of Larisa's network graph, which consisted of 41 in 1993 and of 56 members in 1996.<sup>24</sup>

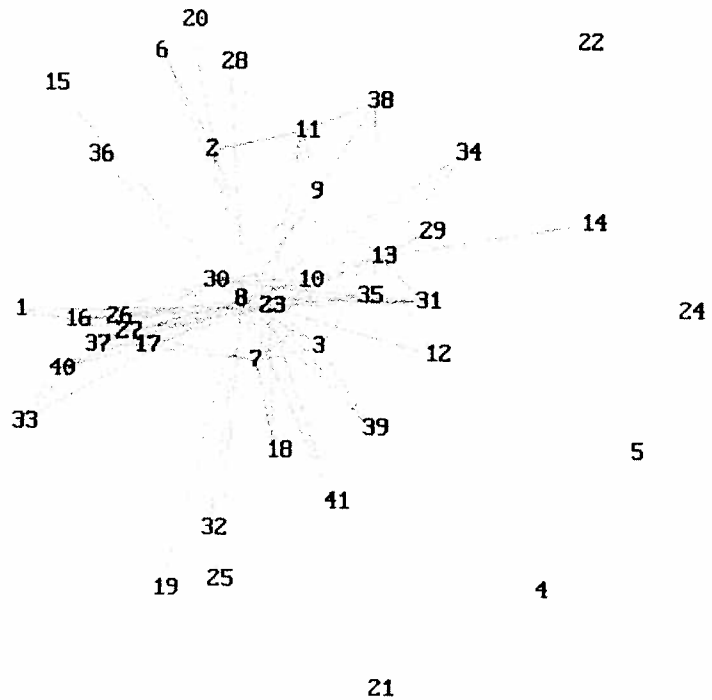


Figure 1.

Figure 1 shows a star-shaped structure for the network, whose center is formed around Larisa's kin relations, particularly her son (number 8). On the left of the figure there is a small clique consisting of her colleagues at the travel agency. The network contains a lot of 'satellite' members, who relate only weakly or not at all to the other members and whose loss consequently would not violate the whole network structure.

Two years later (figure 2) the travel agency clique has already been integrated into her total network. It is now her relatively few colleagues and former students at school who form the small separate clique in the lower part of the figure.

<sup>24</sup> The network graphs in this text were drawn with RESEAU – a computer program developed by Andrei Mogoutov. The graphs also include the 'middlemen' (the persons through whom respondents were introduced to their network members). The number of network members in the figures may thus differ slightly from those recorded in the diaries.

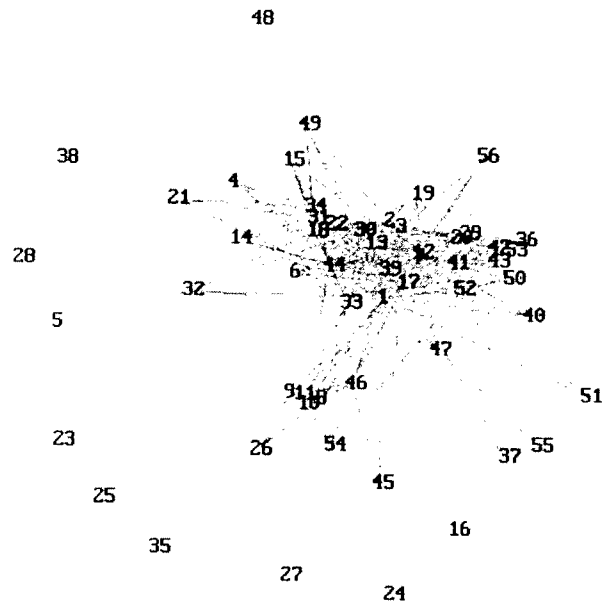


Figure 2.

The visual examination can be complemented by calculating some elementary indicators of network structure. The unconnectedness of many network members in 1993 is reflected in a quite modest network density (13%) which in three years rises to 20%. Those members of Larisa's network who were either directly involved in business life or introduced to Larisa by her business-related network members clearly occupy more central positions in 1996 than in the case three years earlier (see table 3 below).<sup>25</sup>

Table 3.  
Normalized degree centrality\* of some the business-related members  
of Larisa's network in 1993 and 1996. The members reported in both years are in bold.

| 1993                             | Deg | 1996                                                     | Deg |
|----------------------------------|-----|----------------------------------------------------------|-----|
| Svetlana, travel agency employee | 24  | Anatoli, husband, bus driver                             | 38  |
| Raisa, guide                     | 24  | Nikolai, travel agency colleague                         | 35  |
| Ruslan, guide                    | 24  | Alla, seamstress-businesswoman                           | 31  |
| Vadim, travel agency director    | 20  | <b>Svetlana, assistant director at the travel agency</b> | 31  |
| Galina, guide                    | 20  | Anna, teacher, guide and travel agency manager           | 29  |
| Mikhail, guide                   | 17  | <b>Vadim, travel agency director</b>                     | 29  |

\*Degree centrality indicates the number of nodes to which a node is directly connected. Normalized degree centrality takes into account the size of the network thus enabling the comparison of the networks of different sizes.

<sup>25</sup>Centrality indices in Table 3 were calculated with UCINET IV network analysis program (Borgatti, Everett and Freeman 1992).

The picture of Larisa is not, however, complete. To depict her as a businesswoman soon to be leaving the school (as she herself hinted in the interview in 1993) where she has worked from the very beginning would tell only part of the story.

In 1996, Larisa has not yet left the school. She answers the question whether she would quit the school if she won a million dollars negatively, though she would then open her own travel agency. Larisa does not want to quit, even though her work in tourism, particularly during the summer, yields ten times her salary at school. According to Larisa, working at the agency is 'more interesting' than at school but the nature of the competitive business life seems to trouble her:

*'At school everything is very stable. There are no big changes. Though at school there is some moral comfort, it is really an astonishing place. Like an oasis. There is not that kind of continual evaluation of profitability [vygodnost] - - - People really work out of love for children, love for their subject.'*

For Larisa the school seems to be a more 'moral' work place than the travel agency where it is the money that counts, not the higher moral values, such as the love of children. Though Larisa in the 1996 interview says that she does not want to act as a mother substitute for her pupils, she seems to value and maintain her relations with them highly. Yearly on teachers' day, for instance, the pupils of her first graduation class pay her a visit at home. Larisa also praises the majority of her colleagues at school for their moral qualities as educators and mentions how in case of her falling ill there is always somebody from the school to pay her a visit at home.

Larisa's start at the travel agency six years ago could hardly be depicted as the consciously planned choice of a new profession. In 1990 when the school got another biology teacher, Larisa suddenly had much more free time at her disposal. Because of general stress and problems at home she turned to a psychotherapist who recommended that she do something new which she would enjoy. Through an acquaintance Larisa got into the city excursion office courses, a Soviet-period institution where she studied for a year (four hours in the evening three times a week). It was Vadim, one of her fellow students at the office, who established a new travel agency and employed the students from the same course to work there.

Larisa says in the interview that most of the new travel agencies established at the turn of the decade were organized by the people related to or met through the excursion office. It looks as if the competence and cultural capital which after the break-down of the system was used by the course participants for the private purposes had accumulated in this Soviet organization.<sup>26</sup> In 1996 the Russian interviewer, having listened to Larisa's story about her studies at the excursion office, raises this topic herself:

*Interviewer: Interesting, how many people there are who worked as guides - - there are now many of these travel agencies, which deal with foreigners... did these same people organize them?*

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<sup>26</sup> It should be noted that in a cultural-historical city like St. Petersburg tourism is a considerable business.

*Larisa: Basically, yes. I know all the faces at the agencies. Perhaps I do not know them personally, but I've seen them sometime somewhere. [Recently] the city excursion office arranged it's - if I recall correctly - fiftieth anniversary. How many [familiar] faces I saw at this enormous event - - - Of course there is somebody who came later - - - who deals with organizing work. But guides are without exception those people who worked at the city excursion office. Very few of those who came later.*

In sum, Larisa's life situation reflects the dilemma of continuity and change in post-Soviet Russia. Her diaries and interview reveal a continual balance between the new, but risky economic structures and the less lucrative but safer and morally more comfortable school. The new structures (and main part of Larisa's entrepreneurial resources), however, have been built upon the structures and cultural and social capital accumulated during the Soviet era.

### **Katya's Traditional Strategy**

Larisa's balance between the emerging new structures and school can be compared with the more traditional networking strategy of Katya (spb1), a middle-aged school principal. Katya's strategy seems to be based on her numerous social relations of mutual exchange and formal position at school. She was born in Ukraine where she studied at the educational institute. In her fourth year she got married and after graduation in 1980 she followed her Ukrainian husband to Leningrad. She worked as a teacher in another school until she was appointed as deputy principal in 1985. Because of her child she decided to find work closer to home and moved to her current school in late 1980's. She worked as deputy principal until 1990 when she was appointed principal. The family (Katya, her electrician-husband, and their teen-age son who goes to Katya's school) is still in 1996 living in a communal apartment - a fact that astonishes the Russian interviewer even in 1993 interview.

#### 1993

The following selected quotes from Katya's diaries reveal her sociable and emotional character as well as her ability to listen to people's daily problems. Her diaries reveal the kind of person with whom people readily share both their joys and sorrows.<sup>27</sup> The diaries also tell of Katya's competence in using her network for exchanging both personally and professionally important information. Finally, the quotes show how personal and work-related topics constantly mix in her conversations. The reported subjects of discussion easily cross the private/public distinction and on several occasions Katya characterizes her discussion partner with the comment 'we'll solve personal problems' (*my reshaem lichnye problemy*). These kinds of relation are separated from the purely 'professional' or 'matter-of-fact' (*delovye*) relations which may not include scope for a mutually beneficial exchange of favours.

On the very first day Katya meets a 54-year-old teacher Valentina in the train. Valentina, who is working at the city district department of education, is characterized in Katya's diaries: 'When

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<sup>27</sup> On the other hand, Katya's discussion with some of the teachers also reflects a hierarchical leadership style. In the 1996 interview she does not report any close friends at school and her closest collegial relations are with the school administration rather than with the rank-and-file teachers.

*in need, I'll get necessary information [from her]. Well communicate every now and then on various questions'.*

For the following three days Katya takes a work trip to her home country, Ukraine. The trip gives her a welcome opportunity both to express her national feelings and to meet her relatives. As we will note later on, the warm contacts with her home country - strengthened by her husband being from there, too, are not coincidental but both form an important part of the stable 'core' of her social network as well as part of her family's survival strategy in the changing post-Soviet conditions. On the last day of her work trip her cousin Sergei says good-bye at the railway station: *'[Sergei] brought me two bags of food which I asked him to buy'.*

Back in St. Petersburg next day she discusses school affairs with Olga, the school deputy principal characterized as *'a colleague who helps me greatly in solving various problems; often we resolve personal questions'.* Later the same day she phones Antonina, a person about whom Katya has not recorded any background information. From the content of the call one gathers that Antonina is working in administration, perhaps at the teacher training institute: *'I thanked her for helping us, for giving us the necessary information.'*

On day nine the teacher Elvira visits Katya at school *'for personal reasons'.* The last note of the day is the phone call from another teacher, Vladimir. They exchange information on passport formalities and Katya asks about Vladimir's health. He is characterized as *'a colleague; sometimes we communicate on personal questions.'*

On the last day of the study period, the teacher Viktor K returns from hospital. They exchange news accumulated over two weeks. Viktor is characterized as *'a colleague; sometimes we help each other to solve personal problems.'* An hour later she receives a phone call from Elena, a thirty-year-old doctor: *'She asked me a personal favour. She gave interesting information concerning change of apartments.'*<sup>28</sup> On the evening of the last day she phones Ada, a teacher by profession but not working in Katya's school: *'She announced that her financial problems were solved and in the near future she would like to return my loan to her.'*

### 1996

This picture of Katya's daily life and personality has not essentially changed in 1996. This time the main subject at the beginning of her diaries is her mother's aunt's funeral in Moscow to which Katya travels on the very first day of the study period. Apart from the funeral and several phone calls describing them to her other relatives, the first week is devoted to the women's day's celebration both at home and school. However, the basic features of her sociability have not changed: she socializes with and listens to the sorrows of her colleagues and subordinates, maintains relations both with kin, neighbors and members of the school administration.

On day six Katya's family has invited Lidiya, a midwife and their former communal apartment neighbor, for a visit: *'We ate dinner together, listened to music, danced. She talked about her daughter's success in studies, hobbies and friendship with a boy.'* The same day Katya talks at

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<sup>28</sup> Elena is living in St. Petersburg but was born in the same Ukrainian town as Katya (Elena's grand mother was a neighbor of Katya's parents): *'I don't know her personally. We talked three times on the phone.'*

the communal kitchen with her current neighbor, Klara, a cashier: *'I washed dishes, Klara prepared dinner. She told me about her mother's health problems and the difficulties of her living alone in the countryside.'*

This kind of discussion keeps on recurring both in the 1993 and 1996 diaries. Sometimes they include elements of mutual exchange of favours as on day seven in the 1996 diaries with the teacher Nina, who is tutoring Katya's son in mathematics: *'Nina announced that she returned from the hospital. I asked about her health and apologized not having visited her in hospital for which I had reasons. Nina asked how my son was getting on with his studies. She promised to continue doing mathematics with him.'*

It is neither possible nor necessary to repeat here the several diary episodes where Katya helps, gives advice, lends money or obtains medicine for both her colleagues, neighbors, and kin. In Katya's kind of sociability the altruistic and instrumental aspects are inseparable (see Lonkila 1997, 1998, Ledeneva 1996). However, the web of relations she is maintaining in her daily life may be and often is used for mutually beneficial purposes. Katya reports for instance having exchanged medical, financial or other kinds of significant aid with two-thirds of her 77 social network members in 1996.<sup>29</sup>

Katya can thus be described as an extremely sociable and helpful person who knows how to deal with people. When asked about her adaptation to the life of the metropolis she notes her social competence herself in the interview:

*'I've never had particular problems in socializing - - -with my personality [literally: my qualities] - - - I'll get accustomed to anywhere quickly.'*

This personality feature has not appeared overnight. In the interview Katya recalls her warm memories both of childhood and her student days at the educational institute. Katya was elected as a chairman of the institute's student hostel in Ukraine (at the time considered a high duty). With her 'group of active girls' they organized a trip to a Crimean sovkhos where their shock-brigade's work was mentioned in the local newspaper.

Though the subject is not discussed in the diaries, Katya probably was a party member. In the fourth part of the 1993 diaries she mentions 'having been politically active before' but, unlike the members of the repressed intelligentsia, she lost interest in politics when Gorbachev came to power. It is also likely that neither her being elected chairman of the student hostel in the 1970's nor her being first appointed to the deputy principal of the school in 1985 or then as principal would have been possible without an articulated loyalty to the party.

When asked about her conception of 'necessary' or 'useful' people<sup>30</sup> Katya, denies using her social relations for personal gain. Contradicting herself in the very next sentence after this denial (see the underlined sentence in the quote below) and in several other parts in the interview, it

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<sup>29</sup> For each network member, our respondents were asked to indicate whether they had exchanged (received, given or both) medical, financial or other significant aid.

<sup>30</sup> *Nuzhnye/polezhnye lyudi* - a common known Russian expression hinting at the instrumental use of social relations.



in the interview, it becomes evident that her coping strategy is largely based on informal exchanges with the members of her social network<sup>31</sup>:

*Katya: 'In my opinion, necessary and useful people are people who can obtain (dostat) something essential for you, something which is necessary, important, for instance arrange (ustroit) a job for your husband, son, etc. This is what I understand by necessary and useful people. In principle if I wanted to, I could find as many of such people as was necessary at school. Frankly, I don't use their favours. With parents I maintain contact continually - with one mother who works at the pharmacy, because I need medicine and I really need her help constantly.*

*Interviewer: Is she the mother of ...?*

*Katya: Yes, the mother of a third grade student. Sometimes in the past I did her a favour; we took her daughter at the school and I have systematically maintained contact with her.*

The quote shows how Katya can use her formal position at school in order to gain personal benefits. Though schools may have official criteria for selecting their students, it is in practice the principal who decides, thus holding considerable power both over the parents and the teachers (who may arrange study places at school for the children of their own friends through Katya).

An example of Katya's institutional power, and of the fine-tuned way our diaries have to be worked with is the encounter recorded on the very last day of the 1993 diaries. In the afternoon Katya receives at school a visit from Marina P, a 35-year-old teacher whom Katya does not know beforehand: *'She asked me to put her child in the first grade. As a result of [a 20-minute-long] discussion we found common ground (educational institute, holiday in the Crimea, etc.)'*. This laconic note is revealing in its brevity. Though Marina lives in the neighborhood she may (or may not) have right to demand her child's allocation to the quite prestigious school Katya heads. However, on a bad day Katya has every right (if not official, then practical) to refuse this wish by inventing whatever reason she likes. It is therefore of the utmost importance for Marina to develop an atmosphere of mutual benevolence and understanding. Their common profession already helps somewhat. But having found 'common ground' - perhaps mutual friends, memories related to the institute and holidays in the Crimea - seems to guarantee the successful result discernible between the lines of this short diary note.

In addition to the pharmacist-mother mentioned above, Katya's interview is filled with other examples of her networking abilities. Together with her Ukrainian husband from the neighboring village, Katya has maintained close relations with her home country. This is greatly helped by the phone-operator friend of Katya's Ukrainian sister, thanks to whom she made free daily long-distance calls to her relatives, particularly her mother. In case of dental problems,

<sup>31</sup> Following Bourdieu, Ledeneva (1996) has proposed that the Soviet/Russian *blat* tradition of mutual exchange of goods and favours is based on the *misrecognition* of the reciprocal nature of these exchanges ('you scratch my back, I'll scratch yours'). For the participants involved in (sometimes illegal) exchanges it was important to preserve their self-image as unselfish helpers.

Katya may choose between practically free care provided either by the mother of a music teacher at her school or by an Ukrainian dentist-acquaintance of Katya's nurse-sister:

*'There [in Ukraine ] is still gratuitous [dental] service, they treat you for free. This is why I'll visit both in summer and winter. [This] winter I got dental care there, I only gave her a box of chocolate and she filled three teeth.'*<sup>32</sup>

Katya's parents and parents-in-law both cultivate land in their home village and she has organized a regular food supply from Ukraine to St. Petersburg in a lorry: the family gets all of their potatoes from Ukraine . On the other hand, Katya's family regularly sends their relatives products which are more difficult to get or more expensive in Ukraine (such as coffee, chocolate, tea, tinned fish, medicine, etc.)

She lives still in the communal apartment where her neighbors 'practically raised' her son, and she also keeps contacts with her former neighbors. When the family gets food parcels from Ukraine, part of the content is shared with the neighbors. Katya arranges tutoring for her son through her teacher-acquaintance and she has already taken measures to get her son into university (where he would also be protected from going into the army):

*' - - I know already ten deans of faculties [at the university], after two years of his [her son's] being at school I will get to know another 30 deans.'*

Katya's own salary does not rise much above the teacher's modest salary. The family gets by since her electrician-husband earns twice that much and since the network resources described above account for several important daily expenses.

The graph representing Katya's network in 1993 (figure 3) discloses two main cliques consisting of work-mediated relations (upper clique) and of relatives and neighbors (lower clique).<sup>33</sup> The third, smaller clique on the upper-west side, which is weakly related to the rest of the network, consists of Ukrainian teachers met during Katya's work trip. As with Larisa, the mediating point between the two major cliques (number 16) represents Katya's son, who naturally knows most of the teachers at school. This kind of intergenerational sociability common to several teachers in our sample may form the basis for possibly continuing interaction between the son and her mother's colleagues in the future. Since Katya is known among others as a possible source of informal help, the teachers and their connections may be available to Katya's son throughout his later life.

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<sup>32</sup> The box of chocolate is a good example of symbolic gifts related to the mutual 'blat' exchange of services (see Ledeneva 1996). In fact it was Katya's sister's relation with the dentist that 'paid' the treatment, not the chocolate which only showed Katya's appreciation for the favour.

<sup>33</sup> For technical reasons, one of Katya's colleagues reported in the diaries was not included in the graph. Since the colleague is a distant one, this does not affect the overall structure of the network.

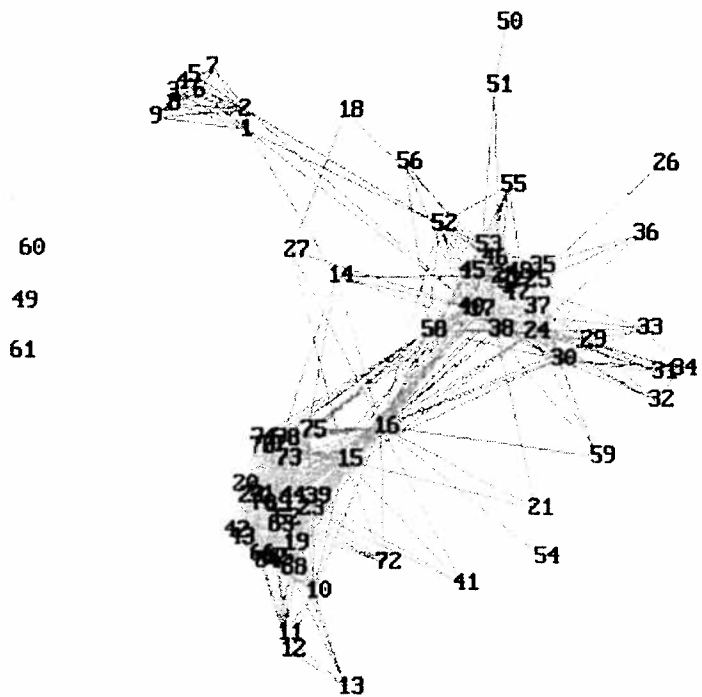


Figure 3.

In 1996 the basic form of Katya's network graph is unchanged (save the disappearance of the smaller Ukrainian clique, see figure 4). The kin-neighbor clique is on the left-hand side, mediated by Katya's son and husband (no. 11 and 12), and the relations with the school milieu on the right. The density of the network has increased in the course of three years from 19% to 25%.

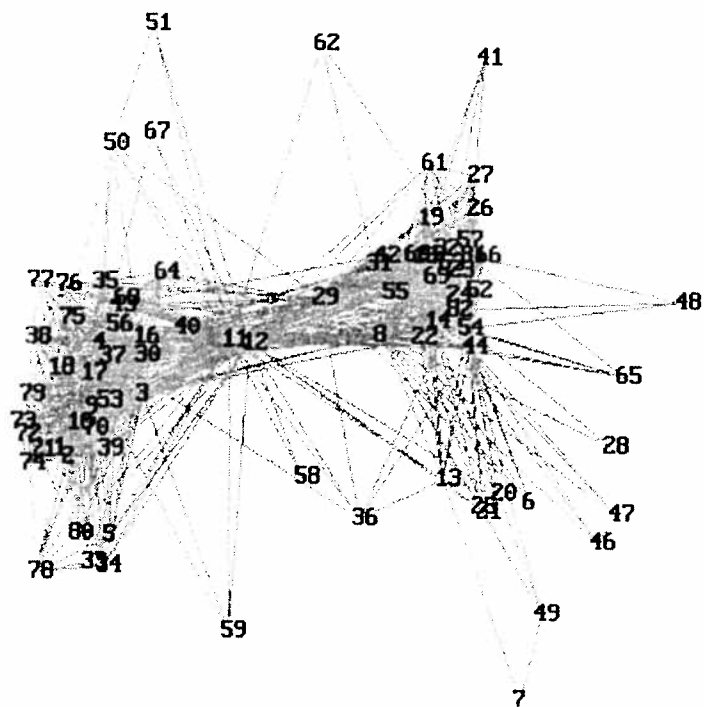


Figure 4.

Unlike Larisa, whose social life has become dominated by evolving new economic structure, Katya quite successfully continues applying her former life style which so far seems to work pretty well. It is even possible that her institutional networking power has *increased* in recent years since, according to Katya, the schools have become independent from the ministry of education, and can now more freely decide on such things as their curriculum, which also includes fee-paying courses. Thus, the restructuring and decentralization of the Soviet school system may even enhance the Soviet-type networking strategy. This admittedly speculative hypothesis is in line with the argument advanced by Endre Sik (1994). He argues somewhat paradoxically that the size of individual's 'network capital' (the sum of the existing network connections which an actor can mobilise when needed) was not only larger under communism than under capitalism but is still larger under post-communism than communism.<sup>34</sup>

### Social Change and Husband's Career

Compared to the relatively successful lives of Larisa and Katya, the lot of the four remaining respondents is less surprising and closer to the picture one might have of the declining standard of living of the Russian teachers. The space does not allow for an in-depth depiction of the life course of all remaining respondents. However, despite the obvious financial difficulties reported by some respondents, the diaries and the interviews do not describe either completely catastrophic life situations or abrupt changes in the social networks over the three years.

In fact the most radical changes in the social life of our female Russian respondents associated with the macro-level changes are to be found in the professional careers of their *husbands*. As noted by Piirainen (1997) it was easier for Russian men to start a career in petty merchandising or business while the wife kept her secure job in public education, even though with a minimal salary. In addition, many of our respondents were married to engineers working in state-owned institutes or factories which could not survive in the new circumstances. In many cases it was indeed the closure of the employing organization that forced the husband to look for the opportunities in the emerging new economic structures.

Larisa's family, where both work in the private sector (her husband being a bus driver at the travel agency) and the wife still maintains a foothold at school, illustrate quite successful entry into new economic structures. The efforts of Faina's (spb2) family on the other hand, end in a cul-de-sac. Faina is a 39-year-old physics teacher<sup>35</sup> whose two children go to her school. The

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<sup>34</sup> According to Sik, networking offers first a low-cost means of coping household in various crisis situations typical of post-communist societies. Second, the post-communist situation combines a very rapidly changing legal system with a massive bureaucracy to control the emergence of new economic structures. In this situation where nobody is sure what is legal and what is not, the new entrepreneurs may use networking in order to grab opportunities. Similarly, for those active in the informal economy, personal networks based on cultural or ethnic groupings offer a low cost and high-trust solution. In addition Sik refers to studies showing that the net change in the former managerial elites was insignificant and that the pattern of using network capital has survived the elite replacement (for more detailed discussion, see Sik 1994).

<sup>35</sup> Like several other teachers she has changed her profession, being originally an engineer by training.

diaries and the interview tell of the family's financial difficulties. Faina tries to supplement her modest salary by giving private lessons, but in practice it is the husband who brings in more money. He used to work in the State Optical Institute until the institute stopped paying the salaries. Thanks to the help of his friends, he managed to find a job in a firm working as a spare parts supplier. This firm went bankrupt, too, and – thanks to his youthful hobby - he started to repair television sets. Piecework pay increased his income until this company (specializing in Russian TV's) also collapsed. At the time of the 1996 interview the husband, a high school trained engineer, works as a repairman in the metro building construction.

The lack of money has forged the family to 'run down' its previous social life giving up many of the standard Soviet period pleasures. They go rarely to the theatre or public swimming pool, avoid organizing big parties, and cannot afford to buy anything expensive. For the summer Faina's mother leaves for the dacha which is located far from St. Petersburg, and takes the children with her, thus freeing Faina from child care during the summer. At the dacha the mother grows vegetables in order to manage over the winter in the city and with the help of her relations has also succeeded in organizing their transportation to St. Petersburg. When the son needs more intensive dental care, she phones her mother's friend for free treatment. Faina has good relations with her neighbors with whom she exchanges a lot of favors. She lends money to her telephonist friend who probably can connect her long distance calls for free. When she needs more money, Faina can turn to her school friend, currently the wife of a businessman. She is, however, reluctant to do this, since the status difference between these 'new Russians' and a secondary school teacher has grown too large.

Compared particularly with the Soviet era, the standard of living of Faina's family has clearly deteriorated. During the three years between 1993 and 1996 the husband has tried to adapt to the changing circumstances through several changes of profession but with poor results. At present, the family manages to get by but not much more.

Despite these changes, Faina's diaries and interviews reveal several features of the family's social life which have not changed and which are strongly present not only among the six respondents, but also in the whole Russian corpus of 40 St. Petersburg teachers. Both the strained relations with her husband and mother-in-law (whom she characterizes in the 1993 diaries as 'an extremely unpleasant human being'), as well as extremely close relations both with her own mother and children are visible in her diaries.<sup>36</sup> It seems as if the marital tie loses in importance when compared to parent-child relation, particularly that between mother and child.

As in Faina's case, the most obvious changes in Zinaida's (spb3) social life are related to her husband's change of career. In 1993, according to Zinaida, the family can guarantee just the minimal amount needed to get by, though she works overtime at school and gives private lessons in the evenings. In the same year the diaries reveal problems in the state-run organization where Zinaida's chemist-husband works as a researcher: Zinaida first reports a discussion with her

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<sup>36</sup> Of our six respondents, only Katya (spb1) reports close relations with her mother-in-law. Zinaida's (spb3) mother-in-law had died, while divorced Lida (spb5) describes her mother-in-law as 'former mother-in-law, no relation' and the picture of Larisa's former father-in-law resembles a horror story. Similarly Varvara (spb6), a French teacher, describes her relations with her current mother-in-law as 'somewhat tense, but I try to maintain good relations' and sees the attitude of her former parents-in-law as the main reason for the divorce from her first husband.

husband about a threatened strike and somewhat later a rise in his salary is mentioned. By 1996 the institute has stopped paying salaries and her husband has found a new job renovating the apartments of the 'new Russians', bringing in a fair amount of money.

When asked in the interview about the changes at school during the last year, Zinaida is the first of the six respondents to note the ongoing social stratification in the schoolyard:

*'There have been a lot of changes. The children themselves have changed. Then the parents' attitude has changed. Parents are now so overloaded by their own work, some of them work from morning until late in the evening. This means that the children are left to their fate. And you can feel that. Even [the parents of] happy families practically only see them when they say them good night.'*

According to Zinaida, the social stratification is already beginning to show in the schoolyard, where the school mates of her own 11-year-old son are having a lot of rich-poor discussions unimaginable ten years ago. The status differences are related not only to the wealth or style of clothes but also to with whom the children socialize. Zinaida tells smilingly how her own children are quickly learning the rules of the market economy: her son charges for his favors at home according to his own price list: taking the garbage out (1000 rubles) walking the dog (1500 rubles), etc. Maintaining the family budget is entrusted to their 20-year-old daughter, a student who considers the parents 'terrible spendthrifts'.

Lida (spb5) whom the reader met in 1993 in the middle of an acute marital crisis, has by 1996 divorced her husband, whose efforts to build a career in private farming ended in failure and who is currently unemployed. Lida herself seems to be better off without her husband and lives with her mother and two children.

Finally, though both Varvara and her engineer-electrician husband do not show signs of any greater wealth, she does not complain about particular hardships either. This time it is Varvara's father who helps the family financially. He is a retired officer who used to work in a company installing metal security doors in apartments. It is the father who has furnished the family with a TV set, video, microwave oven (the family has also a computer) and who also helped to finance his daughter's trip to France.<sup>37</sup>

## CONCLUSIONS

A detailed examination of Larisa's and Katya's social life thus revealed both the importance of social networks as well as a marked difference in their reactions to the changing environment. Larisa's accommodation of her jobs at school and at the travel agency seems in many ways to embody the dialectics between continuity and change in post-socialist society. First, it shows how building up a private enterprise was based on the social relations and cultural capital accumulated during the Soviet era. Second, it shows the difficulties attached to leaving the school milieu and working collective which, even though in Larisa's opinion more human and moral in nature than business, still lacks the dynamics and nerve of the job at the travel agency.

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<sup>37</sup> Apart from the six respondents dealt with in this text, two of the remaining 19 respondents in the 1996 data corpus reported their husbands working as 'businessmen'.

Third, it shows how the business-related social ties gradually take over her network, thereby encouraging private initiative and spreading the information necessary for the new entrepreneurs.

Katya, on the other hand, continues her former way of life based on her formal position and social abilities. Paradoxically it even seems that the restructuring of the Soviet school system may have increased Katya's networking opportunities by extending school autonomy and possibly the negotiating power of the principal.

Finally, in the four remaining intermediate cases it was either through the husband's or father's more or less successful efforts that the family has tried to enter the sphere of the private economy.

These results can be compared with the model of 'household survival strategies' proposed by Timo Piirainen (1997). The comparison is even more interesting, since his interview data was also collected in St. Petersburg during spring 1994. In Piirainen's model Russian household survival strategies consist of their investing assets (such as professional competence) in various combinations either in the new economic structures, Soviet-style economy or in the informal economy based on reciprocal obligations. Piirainen describes three main (ideal-typical) forms of the coping strategies as market-oriented, traditionalist and proletarian (see Piirainen 1997, 159-169). The households applying the market-oriented strategy invest their assets through rational choice in the market economy in order to optimize risk and returns, but also maintain a foothold in the Soviet structure. The traditionalist strategy includes investment primarily in the Soviet and informal economies, while the proletarian strategy is to invest only in declining Soviet economy, because of lack of other resources.

In Piirainen's terms, both Larisa's personal accommodation of school and the travel agency as well as the more or less successful efforts of Faina's, Zinaida's, and Lida's husbands (and Varvara's father) to find a niche as petty entrepreneurs or workers in the private sector could be depicted as following the market-oriented strategy. Similarly, Katya's networking, based on both on her formal position as well as the relations of kin and friendship relations, could be seen as the traditional networking strategy.

Some critical comments are, however, in order. First, while the rational choice model may be appropriate when focusing on the economic aspects of daily survival, it is unclear to what extent this model, with its problems and difficulties, can be applied to other aspects of daily life – a problem of which Piirainen is well aware. Second, Piirainen's basic decision unit is the household or family, which he does not define clearly. It seems that the household means the people who possess the useful assets and who participate in the 'investment' decisions. But could Katya's Ukrainian mother, for example, (or other members of her social network), who phones her daily long distance and supports the family with food, be considered as part of the household regardless of her place of residence? How about Varvara's father, whose help is clearly important to the family? Whether or not we accept the tenets of rational choice theory, defining the nature of the negotiating process and the decision-making unit (individual? couple? nuclear family? extended family? household? etc.) of the strategies employed seems to be a

fruitful direction for future research.<sup>38</sup> If, as it seems, it is the case that the spouses are the main actors, then it is the marital tie which should become the focus of the research. But if, as our preliminary results of admittedly few cases suggest, the marital tie would often lose out to the parent-child relations, then the research should also take into account the role of intergenerational relations and extended family.

The third comment concerns the distinction between the market economy, the Soviet economy and the informal economy. In this ideal-typical distinction the nature of the last of these is based on networks of non-monetary and reciprocal exchanges. While Piirainen himself notes that this distinction is ideal-typical by nature, it neglects the possibility of both emerging new economic structures (as in Larisa's case) and old Soviet structures (as in Katya's case) being built on these very networks and reciprocal exchanges.<sup>39</sup>

The cases of Larisa and Katya presented above are not typical in the statistical sense. Despite this, both cases are indicative in that they show how these two respondents did use their social capacities and network resources to cope in the changing circumstances, illustrating how both the traditional and changing structures *may similarly be built on social configurations inherited from the Soviet era.*

I hope that my text has disclosed both the potential of network analysis for the study of post-socialist society as well as the dangers inherent in our method. First, the systematic examination of the personal networks presented above would be very difficult to do without the diaries or some other kind of detailed self-reporting. On the other hand, without an in-depth interview several features of the Russian respondents' networks (as well as the logics of Larisa's and Katya's strategies) would have remained a mystery. Combining two kinds of data source may open up new possibilities for social research, e.g. by showing whether and in what ways the cultural stereotypes and identities revealed in the interview correspond or contradict the reported social interactions.

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<sup>38</sup> Examining the social networks of all the decision-makers within one household systematically would for instance be a tempting study program. Focusing on the interaction between the social networks of the spouses has been discussed since the pioneering work by Elisabeth Bott (1956). Because we did not collect data on the networks of both spouses, it is impossible to do here.

<sup>39</sup> Sik (1988, 23) for instance argues that reciprocal transactions are widespread among managers in a socialist economy and that 'the causes of the spread of this institution are identical to what we found in the analysis of the household sector, i.e. coping with shortages, perpetual crises, and lack of a proper market or redistributive mechanisms.'



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**ARE YOU AN  
INSNA MEMBER?**

# A Practical Guide to Fitting $p^*$ Social Network Models

Bradley Crouch and Stanley Wasserman<sup>1</sup>  
*University of Illinois*

## PREFACE

To date, no single piece of software has been introduced that meets all the needs of the  $p^*$  modeler. Thus, it is the purpose of this collection of papers, software and practical comments to bring together some of the pieces necessary for the applied researcher to pre-process network data, fit pseudo-likelihood versions of  $p^*$  models, and interpret the results. Although this compilation is intended to be fairly self-contained with respect to computational issues surrounding  $p^*$ , it is assumed that the reader has reviewed the theoretical development of these models by Wasserman & Pattison (henceforth WP) (1996).

## LINEAR REGRESSION REVIEW

Before we move into logistic regressions and  $p^*$  social network models, let us review some basic concepts from a more familiar technique, linear regression analysis (for a full treatment of this topic, see Weisberg (1985)).

One goal in regression analysis is to relate potentially "important" explanatory variables to the response variable of interest. Formally, the basic model states,

$$Y_i = \beta_0 + \beta_1 x_{i1} + \beta_2 x_{i2} + \dots + \beta_p x_{ip} + \epsilon_i \quad (1)$$

where  $Y_i$  is the response for the  $i^{\text{th}}$  case,  $i=1,2,\dots,n$  (number of cases)

$x_{i1}, x_{i2}, \dots, x_{ip}$  are the explanatory variables for the  $i^{\text{th}}$  case

and  $\beta_0, \beta_1, \dots, \beta_p$  are regression coefficients, or model parameters, to be estimated.

Without detailing the computations, estimates of the  $\beta$  coefficients can be found such that the sum of the squared differences between the observed responses ( $Y_i$ ) and the responses predicted by the model ( $\hat{Y}_i$ ) is at a minimum. More formally, the least squares estimates of the regression coefficients minimize the quantity,

$$\sum_{i=1}^n (Y_i - \hat{Y}_i)^2 = \sum_{i=1}^n \hat{\epsilon}_i^2 = SSE \quad (2)$$

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and are usually termed  $\hat{\beta}$ . Of course, the  $\hat{Y}_i$  terms are obtained by “plugging” the observed values of the explanatory variables into the estimated regression function,

$$\hat{Y}_i = \hat{\beta}_0 + \hat{\beta}_1 x_{i1} + \hat{\beta}_2 x_{i2} + \dots + \hat{\beta}_p x_{ip} \quad (3)$$

If the model fits the observed data well, then the sum of squared errors is small relative to the total variation in the response. The “degree” of model fit is often captured by the index,  $R^2$ . Note that when the model fits perfectly,  $SSE = 0$ , and  $R^2 = 1$ .

One can glean some information about the importance of each explanatory variable from a regression by inspecting the sign and magnitude of the estimated regression coefficients. In general, the model states that the response  $Y_i$  changes by a factor of  $\beta_j$  when the  $j^{\text{th}}$  explanatory variable increases by one unit while the remaining explanatory variables are held constant. Since the explanatory variables are often measured on different scales, the magnitude of these coefficients reflect as much about the scale of the data and about the presence or absence of other correlated predictor variables as they convey about the importance of the predictor. Therefore, an alternative strategy of comparing model fit is often used to “tease out” the importance of each explanatory variable.

For instance, consider two models relating

$Y =$  Graduate GPA

to the explanatory variables,

$x_1 =$  Undergrad GPA  
 $x_2 =$  GRE Scores  
 $x_3 =$  Interview Score.

Suppose we fit the full model that includes all three predictor variables and find that it fits quite well with an  $R^2=0.81$ . Our hypothesis, however, might be that interviews of prospective graduate students do not account for an appreciable amount of the variance in GPA. Thus, one might wish to test the hypothesis,

$H_0: \beta_3 = 0$  (no linear relationship between Interview scores & GPA given the presence of the other explanatory variables are in the model)  
 $H_1: \beta_3 \neq 0$

This amounts to comparing the fit of the full model against a reduced model that does not include a parameter for the Interview explanatory variable, i.e.

Full Model:  $Y_i = \beta_0 + \beta_1 x_{i1} + \beta_2 x_{i2} + \beta_3 x_{i3} + \epsilon_i$   
 Reduced Model:  $Y_i = \beta_0 + \beta_1 x_{i1} + \beta_2 x_{i2} + \epsilon_i$

Given independence and normality assumptions about the errors, well-known theory tells us that the difference in fit between the two models follows an F distribution with numerator degrees of freedom equal to the difference in the degrees of freedom of the full versus reduced models

$(df_F - df_R)$  and denominator degrees of freedom equal to  $n-p-1$ . Thus, we can compute the observed F-value via the formula,

$$F_{obs} = \frac{(R_F^2 - R_R^2)/(df_R - df_F)}{(1 - R_F^2)/df_F} \quad (4)$$

and compare it to an F distribution with the appropriate degrees of freedom. If the result is statistically significant, then one can conclude that setting the Interview parameter to zero results in an appreciable loss of fit, suggesting that this explanatory variable should be retained in our model. Conversely, if the observed F statistic is not significant, one may choose to adopt the more parsimonious 2-predictor model. Although the details differ, we will use this same strategy to evaluate the logistic regression models throughout this guide.

### A Comment on Notation

It is often convenient to develop a more compact notation to discuss regression models. In vector notation, model (1) can be restated for the  $i^{\text{th}}$  case as,

$$Y_i = \mathbf{x}_i^T \boldsymbol{\beta} + \epsilon_i \quad (5)$$

$$\text{where } \mathbf{x}_i^T = (1 \ x_{i1} \ x_{i2} \ \dots \ x_{ip}) \\ \text{and } \boldsymbol{\beta}^T = (\beta_0 \ \beta_1 \ \beta_2 \ \dots \ \beta_p).$$

Of course, the use of  $Y_i$ ,  $\mathbf{x}$  and  $\boldsymbol{\beta}$  to represent the response, the vector of explanatory variables and the parameter vector, respectively, is a matter of convention. We could have just as well defined

$$X_i = \mathbf{z}_i^T \boldsymbol{\theta} + \epsilon_i.$$

This latter notation more closely corresponds to that used from this point forward.

### A Regression Model For Binary Responses

Turning back to the previous regression model for Graduate GPA, suppose that members of the graduate admission committee are less interested in predicting prospective student grades, but are more concerned with predicting the completion, or lack thereof, of the PhD dissertation. This new response, denoted by  $X_i$ , can take on only two values of 1="Completed" or 0="Not Completed". For simplicity, let us consider the relationship of the response to a single explanatory variable,  $z_1$  = "Undergraduate GPA".

With continuous variables, a scatterplot is commonly used to visualize the relationship between the response and an explanatory variable. In the case of this binary response, however, a scatterplot of the  $z_i$  versus the  $X_i$  would result in two horizontal bands of points at both  $X = 1$  and  $X = 0$ . Thus, in order to generate a more meaningful plot and summarize the data in a more meaningful way, let us group the observations into intervals based on the GPA of the cases and

consider the proportion of dissertation completions +within each GPA group. The resulting plot might look like Figure 1.

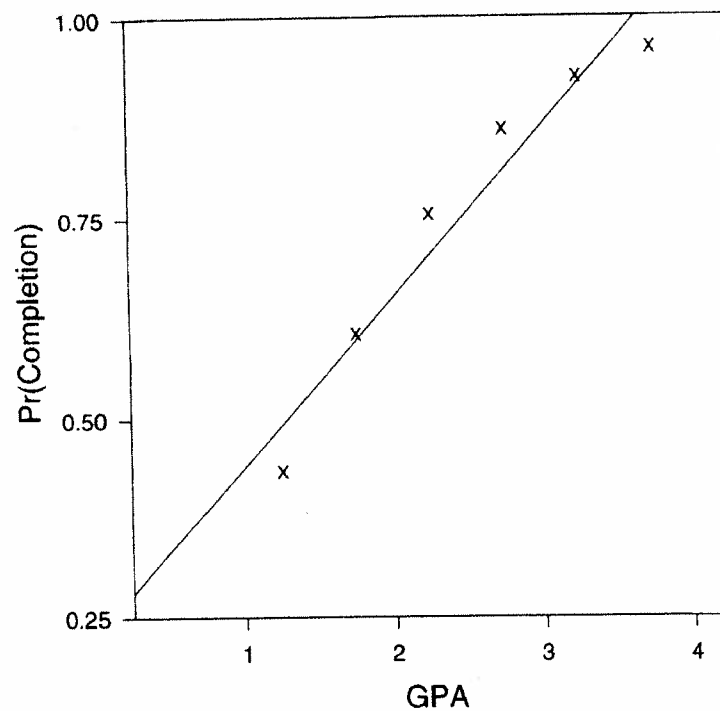


Figure 1.

We now have a plot of the empirical probabilities of completing the dissertation as a function of "grouped" GPA and can now study the linear relationship between the two variables. But, note that the linear regression line demonstrates some serious flaws in using linear models for binary responses. Perhaps the most obvious of these is the fact that for sufficiently large or small values of the explanatory variable, the model predicts values outside of the  $[0,1]$  range of the response. Further, one might notice that there appears to be a different relationship between  $z$  and  $X$  at different levels of  $z$ . A small increase in grade point at the middle values of GPA has a high impact on the proportion of those completing their dissertation. On the other hand, it appears that for students in the two highest GPA intervals, the proportion of students that complete the dissertation changes little since the proportion is near the maximum value of the response, unity.

Agresti (Ch. 4, 1990) cites other more technical defects in linear models for probabilities including the sub-optimality of least squares estimators, failure of the homoscedasticity assumption, and the lack of normally distributed errors. Altogether then, it appears that a different type of regression model is needed for binary data, and in particular, for dichotomous social relations.

## THE BASICS OF LOGISTIC REGRESSION

Another look at the previous plot suggests not a linear, but a curvilinear relationship between GPA and dissertation completion. Thus, instead of fitting a straight line to the data, a special type of curve can be used to model the relationship between the explanatory variable and the response. This curve can be described by a function of a set of parameters (parameters not unlike the  $\beta$  coefficients in (1)). Here, however, the function relating the explanatory variable to the response is nonlinear, and is of the form,

$$Pr(X=1) = \frac{\exp(\theta_0 + \theta_1 z_1)}{1 + \exp(\theta_0 + \theta_1 z_1)} \quad (6)$$

and is called the *logistic regression function*.

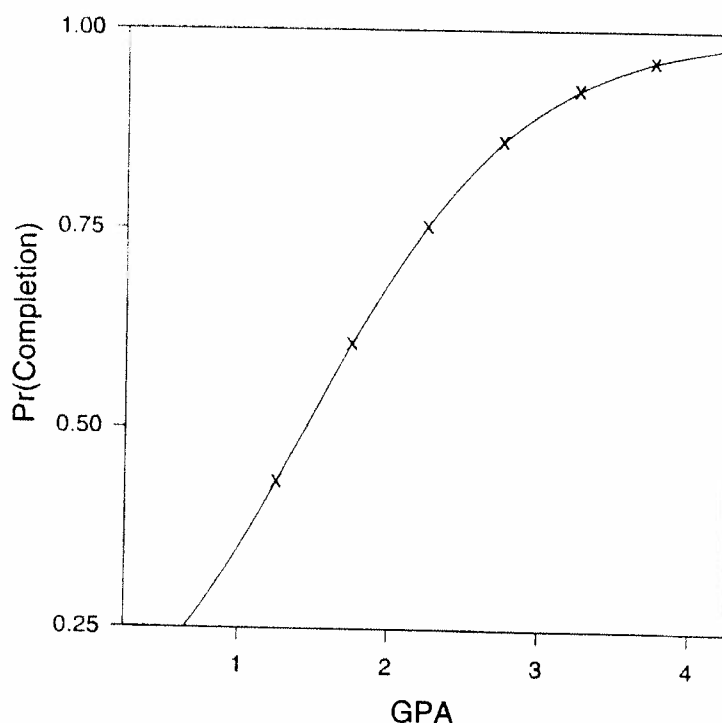


Figure 2.

This model can be reformulated into a linear model by considering the log odds of the response, or the log of the ratio of the probability that the response equals one to the probability that it equals zero, or

$$\log\left(\frac{Pr(X=1)}{Pr(X=0)}\right) = \theta_0 + \theta_1 z_1 \quad (7)$$

Notice that the response,  $X$ , has been transformed from a variable that ranges between one and unity to a variable called a *logit* that ranges from  $-\infty$  to  $+\infty$ . When the responses zero and one are

equally likely, the logit equals zero, but is positive when one is the more probable outcome and negative when zero is more probable.

A third formulation of the logistic regression model provides a possibly more intuitive interpretation of the  $\theta$  coefficients. Rather than considering the natural logarithm of the odds that the response is unity, one can consider the odds ratio itself, or

$$\frac{Pr(X=1)}{Pr(X=0)} = \exp(\theta_0 + \theta_1 z_1) = e^{\theta_0} (e^{\theta_1})^{z_1} \quad (8)$$

Thus, for a unit increase in the explanatory variable  $z_1$ , the odds ratio that the response equals one changes by a factor of  $\exp(\theta_1)$ . In our example, if  $\theta_1 = .69315$ , the model would predict that an increase of one in Undergraduate GPA would increase the odds of dissertation completion by a factor of  $\exp(.69315) = 2$ .

Further, one can compute the predicted probability of dissertation completion given the student's GPA from (6). If  $\theta_0 = 0.2$ ,  $\theta_1 = 0.69135$ , and  $z_{1i} = 3.0$ , the model predicts that

$$Pr(X_i = 1) = \frac{\exp(0.2 + .69315 * 3.0)}{1 + \exp(0.2 + .69315 * 3.0)} \approx 0.91 \quad (9)$$

Of course, we have yet to determine if these probabilities predicted by the model correspond well to the observed data. Thus, we now turn to a summary of techniques useful for assessing model fit.

### ASSESSING THE FIT OF A LOGISTIC REGRESSION MODEL

As described earlier,  $R^2$  is a natural measure of fit for linear regression models as it is directly related to the least squares criterion used to obtain the "best" estimates of the regression parameters. Logistic regression coefficients are estimated by maximum likelihood, using an iteratively reweighted least squares computational procedure. The "natural" measure of model fit is given by the maximized log likelihood of the model given the observed data, and denoted by  $L$ .

Recall that we can compare the fit of two linear regression models using (4). Similarly, we can compare the fit of two logistic regression models by inspecting the likelihood ratio statistic,

$$LR = -2(L_R - L_F), \quad (10)$$

where  $L_F$  is the log likelihood of the full model and  $L_R$  is the log likelihood of the reduced model (obtained by setting  $q$  of the parameters in the full model to zero). When the full model "fits" and the number of observations is large,  $LR$  is distributed as a chi-squared random variable with  $q$  degrees of freedom. Therefore, if the difference in fit between two models is small relative to the  $\chi^2_q$  distribution, one can adopt the model with fewer parameters without suffering an appreciable loss of fit. A discussion of other fit measures is found later in this guide.

Guided by the discussion in this section and intuition already developed for linear regression models, we have the basic components necessary to estimate, test the fit of, and interpret logistic



regression models for binary responses. We now turn to a class of models for the binary response of interest in this guide, a social network relational tie.

### A SMALL ARTIFICIAL NETWORK DATASET

The discussion of  $p^*$  that follows center around a fictitious network of six organizations whose directed graph appears in Figure 3. Each organization is of one of two types – either a governmental research organization (circular nodes) or a private R&D lab (square nodes).

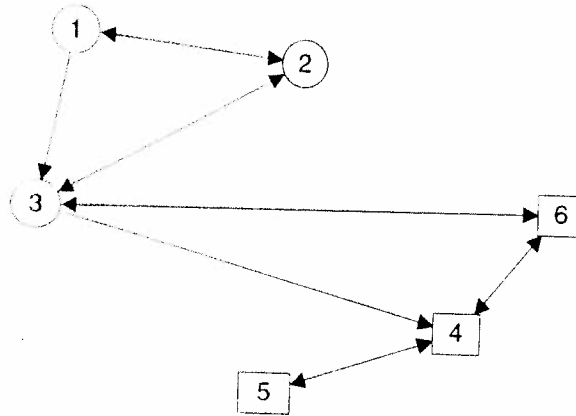


Figure 3.

Suppose that the directional relation  $X =$  "Provides programming support to" was measured on the six actors involved in a software collaboration. If the reason for forming this collaboration was to provide equal access of programming efforts to each entity by all of the others, a researcher might be interested in determining if the organizations do, in fact, provide programming support to the other entities with equal frequency. Alternatively, there may exist a tendency to provide programming assistance more frequently to those of their own type. Although one can describe the presence or absence of these tendencies in a number of ways,  $p^*$  models provide a statistical framework to test hypotheses like that of "unequal access" described above<sup>2</sup>.

One can frame the unequal access notion in terms of the presence or absence of certain network structures. For instance, if the density of ties within organizations of a certain type is greater than that outside of their type, this lends evidence to unequal access—one might call this the presence of positive differential "Choice Within Positions". Network statistics, or counts, such as those in Table 3 of WP intend to capture the existence of such structure. These statistics will be denoted by  $z_1(\mathbf{x})$ ,  $z_2(\mathbf{x})$ , ...,  $z_p(\mathbf{x})$ . But in order to determine the statistical importance of these counts, a statistical model becomes necessary.

<sup>2</sup> It is important to note that due to the small size of this artificial network, it is nice for illustrative purposes, but any statistical analysis of it will suffer given its size. A second example, based on a 17-actor network, appears later and is more amenable to statistical analysis.

As described more completely by WP (p. 406),  $p^*$  models postulate that the probability of an observed graph is proportional to an exponential function of a linear combination of the network statistics, or

$$Pr(X=x) = \frac{\exp(\theta'z(x))}{\kappa(\theta)} \propto \exp\{\theta_1 z_1(x) + \theta_2 z_2(x) + \dots + \theta_p z_p(x)\} \quad (11)$$

where  $\theta$  is the vector of model parameters and  $z(x)$  is the vector of network statistics. For example, suppose that one element of  $z(x)$  is a count of the number of ties within positions and the  $\theta$  parameter corresponding to the count is large and positive. Such a model predicts that networks with a large number of within position ties will be observed with a higher probability than those with a lesser number of within position ties (see also, WP p. 415 for more on model interpretation).

Of course, in practice, the  $\theta$  parameters are not known *a priori* and must be estimated. Due to the difficulty in analytically specifying the  $\kappa(\theta)$  term in the probability function (11), the model does not lend itself well to maximum likelihood estimation. Fortunately, the model can be reformulated in logit terms and fitted approximately by logistic regression—a strategy to be summarized next.

### THE LOGIT P\* REPRESENTATION

As more fully laid out by WP, the log linear form of  $p^*$  given by (11) can be reformulated as a logit model for the probability of each network tie, rather than the probability of the sociomatrix as a whole. First, WP defines three new sociomatrices,

- $X_{ij}^+$ : the sociomatrix for relation X where the tie from actor  $i$  to actor  $j$  is forced to be present.
- $X_{ij}^-$ : the sociomatrix for relation X where the tie from actor  $i$  to actor  $j$  is forced to be absent.
- $X_{ij}^c$ : the sociomatrix of the complement relation for the tie from  $i$  to  $j$ . This complement relation has no relational tie coded from  $i$  to  $j$ -- one can view this single tie as missing.

By conditioning on the complement relation, some algebra (WP, p 407) yields a logit model for the probability of each network tie as a function of the explanatory variables, or

$$\omega_{ij} = \log \left\{ \frac{Pr(X_{ij}=1|X_{ij}^c)}{Pr(X_{ij}=0|X_{ij}^c)} \right\} = \theta' [z(x_{ij}^+) - z(x_{ij}^-)] = \theta' \delta(x_{ij}) \quad (12)$$

The expression  $\delta(x_{ij})$  is the vector of changes in network statistics that arises when the tie  $X_{ij}$  changes from a 1 to a 0. The similarity between this formulation, termed logit  $p^*$ , and the logit

version of the logistic regression model (4) is apparent, suggesting that logistic regression is a suitable estimation technique.

Statistical interpretation of logistic regression models, however, depends on the assumption that the logits are independent of one another. In the case of  $p^*$ , the logits are clearly not independent. Therefore, measures such as the likelihood ratio statistic do not carry a strict statistical interpretation, but are useful as a liberal guide for evaluating model goodness-of-fit.

Armed with a basic understanding of *logit p\**, we can now proceed to a more practical discussion of the steps necessary to fit the model to our fictitious network of six organizations.

### MODEL FITTING WITH LOGISTIC REGRESSION

Suppose, for example, we are considering a model with parameters for overall degree of Choice ( $\theta$ ), Differential Choice Within Positions ( $\theta_w$ ), Mutuality ( $\rho$ ), Differential Mutuality Within Positions ( $\rho_w$ ), and Transitivity ( $\tau_T$ ). Thus, the vector of model parameters to be estimated is

$$\theta = \{ \theta \quad \theta_w \quad \rho \quad \rho_w \quad \tau_T \}.$$

In order to compute the vector of explanatory variables,  $\delta(x_{ij})$ , that consists of elements corresponding to each of the parameters, we examine each  $x_{ij}$  for all  $i, j=1, 2, \dots, n, i \neq j$ , and compute the change in the vector of network statistics,  $\mathbf{z}(\mathbf{x})$ , when the tie between  $i$  and  $j$  changes from a 1 to a 0.

First, as defined by WP (p 407), we recall that

$$\begin{aligned} \delta(x_{ij}) &= [\mathbf{z}(\mathbf{x}_{ij}^+) - \mathbf{z}(\mathbf{x}_{ij}^-)] \\ &= \{ z_1(\mathbf{x}_{ij}^+) - z_1(\mathbf{x}_{ij}^-), z_2(\mathbf{x}_{ij}^+) - z_2(\mathbf{x}_{ij}^-), z_3(\mathbf{x}_{ij}^+) - z_3(\mathbf{x}_{ij}^-), z_4(\mathbf{x}_{ij}^+) - z_4(\mathbf{x}_{ij}^-), z_5(\mathbf{x}_{ij}^+) - z_5(\mathbf{x}_{ij}^-) \} \end{aligned}$$

where, in our case (based on WP Table 3),

$$z_1(\mathbf{x}) = L = \sum_{i,j} X_{ij} \text{ is the statistic for the Choice parameter, } \theta$$

$$z_2(\mathbf{x}) = L_w = \sum_{i,j} X_{ij} \delta_{ij} \text{ is the statistic for the Choice Within Positions parameter, } \theta_w,$$

$$z_3(\mathbf{x}) = M = \sum_{i < j} X_{ij} X_{ji} \text{ is the statistic for the Mutuality parameter, } \rho,$$

$$z_4(\mathbf{x}) = M_w = \sum_{i < j} X_{ij} X_{ji} \delta_{ij} \text{ is the statistic for the Mutuality Within Positions parameter, } \rho_w,$$

and

$$z_5(\mathbf{x}) = T_T = \sum_{i,j,k} X_{ij} X_{jk} X_{ik} \text{ is the statistic for the Transitivity parameter, } \tau_T.$$

Note that the indicator variable  $\delta_{ij}=1$  if actors  $i$  and  $j$  are in the same position, and 0 otherwise.

So, to demonstrate the computations, let us first consider the tie  $x_{12}$ . We can compute the explanatory variable for Choice by considering the difference in  $z_1(\mathbf{x})$  when the tie is present versus when it is absent. In other words,

$$\Delta L = z_1(\mathbf{x}_{ij}^+) - z_1(\mathbf{x}_{ij}^-) = L(\mathbf{x}_{ij}^+) - L(\mathbf{x}_{ij}^-) = 12 - 11 = 1.$$

Similarly, the change in  $z_3(\mathbf{x})$  is the difference in the number of mutual ties when  $x_{12}$  goes from 1 to 0, or

$$\Delta M = z_3(\mathbf{x}_{ij}^+) - z_3(\mathbf{x}_{ij}^-) = M(\mathbf{x}_{ij}^+) - M(\mathbf{x}_{ij}^-) = 5 - 4 = 1.$$

The change in  $z_4(\mathbf{x})$  is computed somewhat differently as one only counts the number of mutual ties between actors in the same position. Since actors 1 and 2 are "blocked" together and have a mutual tie, the change in  $M_w$  equals the change in  $M$ :

$$\Delta M_B = z_4(\mathbf{x}_{ij}^+) - z_4(\mathbf{x}_{ij}^-) = M_B(\mathbf{x}_{ij}^+) - M_B(\mathbf{x}_{ij}^-) = 5 - 4 = 1.$$

Note, however, that for the tie  $x_{36}$ ,  $\Delta M_B=0$  despite the fact that the tie between actors 3 and 6 is mutual. Since they are not in the same position, the indicator variable  $\delta_{ij}=0$ , thus this mutual tie is not counted. Of course, one can continue this process for all five explanatory variables for all off-diagonal elements in  $\mathbf{x}$ . Fortunately, the C program PREPSTAR (Ardu, 1995) performs these calculations for a host of network statistics and sociomatrices of any size.

Listed below is an excerpt from PREPSTAR output (see the section on preprocessing network data for more detail). The output consists of  $g(g-1)$  lines, each containing the actor indices  $i$  and  $j$ , the observed tie between them, and the vector of explanatory variables.

| Obs | i | j | tie | L | L_W | M | M_W | T_T |
|-----|---|---|-----|---|-----|---|-----|-----|
| 1   | 1 | 2 | 1   | 1 | 1   | 1 | 1   | 2   |
| 2   | 1 | 3 | 1   | 1 | 1   | 0 | 0   | 3   |
| 3   | 1 | 4 | 0   | 1 | 0   | 0 | 0   | 1   |
| 4   | 1 | 5 | 0   | 1 | 0   | 0 | 0   | 0   |
| 5   | 1 | 6 | 0   | 1 | 0   | 0 | 0   | 2   |
| 6   | 2 | 1 | 1   | 1 | 1   | 1 | 1   | 1   |
| 7   | 2 | 3 | 1   | 1 | 1   | 1 | 1   | 2   |
| 8   | 2 | 4 | 0   | 1 | 0   | 0 | 0   | 2   |
| 9   | 2 | 5 | 0   | 1 | 0   | 0 | 0   | 0   |
| 10  | 2 | 6 | 0   | 1 | 0   | 0 | 0   | 3   |
| 11  | 3 | 1 | 0   | 1 | 1   | 1 | 1   | 3   |
| 12  | 3 | 2 | 1   | 1 | 1   | 1 | 1   | 1   |
| 13  | 3 | 4 | 1   | 1 | 0   | 0 | 0   | 3   |
| 14  | 3 | 5 | 0   | 1 | 0   | 0 | 0   | 2   |
| 15  | 3 | 6 | 1   | 1 | 0   | 1 | 0   | 2   |
| 16  | 4 | 1 | 0   | 1 | 0   | 0 | 0   | 0   |
| 17  | 4 | 2 | 0   | 1 | 0   | 0 | 0   | 1   |
| 18  | 4 | 3 | 0   | 1 | 0   | 1 | 0   | 3   |
| 19  | 4 | 5 | 1   | 1 | 1   | 1 | 1   | 0   |
| 20  | 4 | 6 | 1   | 1 | 1   | 1 | 1   | 1   |
| 21  | 5 | 1 | 0   | 1 | 0   | 0 | 0   | 0   |
| 22  | 5 | 2 | 0   | 1 | 0   | 0 | 0   | 0   |
| 23  | 5 | 3 | 0   | 1 | 0   | 0 | 0   | 1   |
| 24  | 5 | 4 | 1   | 1 | 1   | 1 | 1   | 0   |
| 25  | 5 | 6 | 0   | 1 | 1   | 0 | 0   | 3   |
| 26  | 6 | 1 | 0   | 1 | 0   | 0 | 0   | 1   |
| 27  | 6 | 2 | 0   | 1 | 0   | 0 | 0   | 3   |
| 28  | 6 | 3 | 1   | 1 | 0   | 1 | 0   | 1   |

|    |   |   |   |   |   |   |   |   |
|----|---|---|---|---|---|---|---|---|
| 29 | 6 | 4 | 1 | 1 | 1 | 1 | 1 | 2 |
| 30 | 6 | 5 | 0 | 1 | 1 | 0 | 0 | 3 |

Text such as this is easily imported into most statistical packages, including SAS and SPSS.

For demonstration purposes, these data were imported into SPSS-- the resulting SPSS data file is saved under the name 6ACTOR.SAV on the included disk. A total of four models were considered ranging from the largest model that contains all the explanatory variables described above to the simplest of models containing only a parameter for Choice. Output from each of these regressions appears next. A guide to interpreting the SPSS output follows the first model and an overall summary of the results precedes the close of this section.

**Model 1: Choice + Choice Within Positions + Mutuality + Mutuality Within Positions + Transitivity**

|                   |            |    |              |     |
|-------------------|------------|----|--------------|-----|
| -2 Log Likelihood | 20.893     |    |              | [1] |
| Goodness of Fit   | 42.368     |    |              | [2] |
|                   | Chi-Square | df | Significance |     |
| Model Chi-Square  | 20.696     | 5  | .0009        | [3] |
| Improvement       | 20.696     | 5  | .0009        |     |

Classification Table for TIE [4]

|          |   |   |           |   |    |   |                 |
|----------|---|---|-----------|---|----|---|-----------------|
|          |   |   | Predicted |   |    |   |                 |
|          |   |   | 0         | 1 |    |   | Percent Correct |
| Observed |   |   | 0         | 1 |    |   |                 |
| 0        | 0 | I | 16        | I | 2  | I | 88.89%          |
| 1        | 1 | I | 2         | I | 10 | I | 83.33%          |
|          |   |   | Overall   |   |    |   | 86.67%          |

----- Variables in the Equation -----

| Variable | [5]<br>B | [6]<br>S.E. | [7]<br>Wald | [8]<br>df | [9]<br>Sig | R      | [10]<br>Exp(B) |
|----------|----------|-------------|-------------|-----------|------------|--------|----------------|
| L        | -2.2079  | 1.1968      | 3.4036      | 1         | .0651      | -.1837 | .1099          |
| L_W      | 2.7390   | 2.1829      | 1.5744      | 1         | .2096      | .0000  | 15.4709        |
| M        | 3.7356   | 1.8281      | 4.1755      | 1         | .0410      | .2287  | 41.9139        |
| M_W      | -1.5861  | 2.9205      | .2949       | 1         | .5871      | .0000  | .2047          |
| T_T      | -.4081   | .6895       | .3502       | 1         | .5540      | .0000  | .6649          |

Correlation Matrix: [11]

|          |          |         |         |         |         |
|----------|----------|---------|---------|---------|---------|
|          | Constant | L_B     | M       | M_BLK   | T_T     |
| Constant | 1.00000  | -.08007 | -.26511 | .00392  | -.49406 |
| L_W      | -.08007  | 1.00000 | .58598  | -.82404 | -.67675 |
| M        | -.26511  | .58598  | 1.00000 | -.77846 | -.46499 |
| M_W      | .00392   | -.82404 | -.77846 | 1.00000 | .61903  |
| T_T      | -.49406  | -.67675 | -.46499 | .61903  | 1.00000 |

## Interpreting The Output

The discussion below refers to each of the 11 bold markers (e.g. [1]) in the preceding output. For more detail, see the SPSS documentation.

[1]. This is twice the negative of the log likelihood for the model. Note, that as a model fits better,  $-2L$  decreases. If the model were to fit perfectly, the likelihood would equal one and  $-2L$  would equal zero. Thus, this is a "badness of fit" measure—large values suggest poor fit.

[2]. This goodness of fit measure is based on the residuals, or the difference between the observed responses  $x_{ij}$  and the probabilities predicted by the model,  $\hat{x}_{ij}$ , and defined as

$$Z^2 = \sum_{i=1}^{g(g-1)} \frac{(x_{ij} - \hat{x}_{ij})^2}{\hat{x}_{ij}(1 - \hat{x}_{ij})}$$

[3]. The difference between  $-2L$  for the model and  $-2L$  for a model with all parameters for all explanatory variables set to 0.

[4]. This table crossclassifies the observed response with the response predicted by the model (if  $\hat{x}_{ij} > .50$  then the predicted response is set to 1, else it is set to 0).

[5]. The parameter estimate for the explanatory variable listed on the left. In terms of the log linear form of  $p^*$ , a large positive value of a parameter suggests the presence of the associated network structural component (such as Mutuality), while a large negative value suggests its absence. Since the explanatory variables are measured on different scales, the notion of a "large" or "small" value is not especially well-defined. Thus, in order to determine a single parameter's contribution to the overall likelihood, one can fit a smaller model without the parameter and inspect the increase in  $-2L$ , as previously discussed. Dually, one can interpret the parameters in terms of logit  $p^*$ . For instance, as the number of transitive triads involving the tie from actor  $i$  to actor  $j$  increases by one, and the other explanatory variables remain constant, the odds that  $i$  sends a tie to  $j$  increase by a factor of  $\exp(\tau) = 0.6649$  (from the column labeled [10]).

[6]. The estimated asymptotic standard error of the parameter estimate. With network data, these standard errors are known to be too narrow, thus should not be strictly interpreted.

[7]. The Wald statistic, defined as

$$\{(\text{parameter estimate})/\text{SE}(\text{parameter estimate})\}^2$$

For large sample sizes, this statistic is distributed as a chi-squared random variable with one degree of freedom. It is generally agreed (e.g. Agresti, 1990) that this statistic can be poorly behaved when the estimate is large, thus comparing two model likelihoods (as discussed in [5]) is the suggested strategy.

[8] & [9]. Degrees of freedom and *p*-value for the Wald statistic.

[10]. See [5].

[11]. The matrix of correlations of the parameter estimates. While it is expected that the parameters will often be correlated, correlations of very large magnitude (either positive or negative) suggest that the parameters are not only accounting for very similar effects, but may lead to numerical instability of the estimation procedure. Thus, guided by theory, it is advisable to reconsider the choice of explanatory variables such that they capture more distinct structural elements in the network.

**Model 2: Choice + Choice Within Positions + Mutuality + Mutuality Within Positions**

|                   |            |    |              |
|-------------------|------------|----|--------------|
| -2 Log Likelihood | 21.265     |    |              |
| Goodness of Fit   | 29.997     |    |              |
|                   | Chi-Square | df | Significance |
| Model Chi-Square  | 20.324     | 4  | .0004        |
| Improvement       | 20.324     | 4  | .0004        |

Classification Table for TIE

|          |   |           |      |  |                 |
|----------|---|-----------|------|--|-----------------|
|          |   | Predicted |      |  |                 |
|          |   | 0         | 1    |  | Percent Correct |
| Observed |   | 0         | 1    |  |                 |
| 0        | 0 | I 16 I    | 2 I  |  | 88.89%          |
| 1        | 1 | I 2 I     | 10 I |  | 83.33%          |
|          |   | Overall   |      |  | 86.67%          |

----- Variables in the Equation -----

| Variable | B       | S.E.   | Wald   | df | Sig   | R      | Exp(B)  |
|----------|---------|--------|--------|----|-------|--------|---------|
| L        | -2.6388 | 1.0350 | 6.5005 | 1  | .0108 | -.3290 | .0714   |
| L_W      | 1.9456  | 1.6035 | 1.4723 | 1  | .2250 | .0000  | 6.9981  |
| M        | 3.3319  | 1.6035 | 4.3178 | 1  | .0377 | .2361  | 27.9926 |
| M_W      | -.5594  | 2.2795 | .0602  | 1  | .8062 | .0000  | .5716   |

**Model 3: Choice + Mutuality**

-2 Log Likelihood 23.371  
 Goodness of Fit 30.000

|                  | Chi-Square | df | Significance |
|------------------|------------|----|--------------|
| Model Chi-Square | 18.217     | 2  | .0001        |
| Improvement      | 18.217     | 2  | .0001        |

Classification Table for TIE

| Observed |   | Predicted |      | Percent Correct |
|----------|---|-----------|------|-----------------|
|          |   | 0         | 1    |                 |
| 0        | 0 | I 16 I    | 2 I  | 88.89%          |
| 1        | 1 | I 2 I     | 10 I | 83.33%          |
| Overall  |   |           |      | 86.67%          |

----- Variables in the Equation -----

| Variable | B       | S.E.   | Wald    | df | Sig   | R      | Exp(B)  |
|----------|---------|--------|---------|----|-------|--------|---------|
| L        | -2.0794 | .7500  | 7.6872  | 1  | .0056 | -.3698 | .1250   |
| M        | 3.6889  | 1.0782 | 11.7057 | 1  | .0006 | .4831  | 39.9999 |

**Model 4: Choice**

-2 Log Likelihood 40.381  
 Goodness of Fit 30.000

|                  | Chi-Square | df | Significance |
|------------------|------------|----|--------------|
| Model Chi-Square | 1.208      | 1  | .2717        |
| Improvement      | 1.208      | 1  | .2717        |

Classification Table for TIE

| Observed |   | Predicted |     | Percent Correct |
|----------|---|-----------|-----|-----------------|
|          |   | 0         | 1   |                 |
| 0        | 0 | I 18 I    | 0 I | 100.00%         |
| 1        | 1 | I 12 I    | 0 I | .00%            |
| Overall  |   |           |     | 60.00%          |

----- Variables in the Equation -----

| Variable | B      | S.E.  | Wald   | df | Sig   | R     | Exp(B) |
|----------|--------|-------|--------|----|-------|-------|--------|
| L        | -.4055 | .3727 | 1.1837 | 1  | .2766 | .0000 | .6667  |



**Summary:**

| Model                                                                                       | Number of Parameters | -2L   |
|---------------------------------------------------------------------------------------------|----------------------|-------|
| 4. Choice                                                                                   | 1                    | 40.38 |
| 3. Choice + Mutuality                                                                       | 2                    | 23.37 |
| 2. Choice + Mutuality + Choice Within Positions + Mutuality Within Positions                | 4                    | 21.27 |
| 1. Choice + Mutuality + Transitivity + Choice Within Positions + Mutuality Within Positions | 5                    | 20.89 |

Inspection of  $-2L$  for Model 4 versus Model 3 reveals a large difference in fit, lending evidence to the importance of mutuality to the network. The parameter estimate is 3.6889, suggesting a very strong overall tendency for relational ties to be reciprocated. A glance at the directed graph presented earlier confirms this trend as there are clearly a large number of mutual ties as compared to non-mutual ties.

Now recall the 'unequal access' hypothesis from the description of the 6-actor network. It was conjectured that organizations may tend to support the programming efforts of other organizations of their own type more often than those of other types. Inspection of  $-2L$  suggests that Models 1-3 do not differ greatly with respect to overall fit, lending evidence against both the presence of differential choice within positions and a tendency for (or against) the transitivity of ties. Thus, it appears that there is no strong evidence to conclude that these fictitious organizations tend to differentially support those in either network position. Further, it is clear that programming support is often reciprocated.

**REFERENCES**

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- Weisberg, S. 1985. *Applied linear regression*. Wiley: New York.
- Wasserman, S. & Pattison, P. 1996. Logit models and logistic regressions for social networks: I. An introduction to markov graphs and  $p^*$ . *Psychometrika*, 61, 401-425.

## Articles and Chapters

- Abrahamson, Eric; Rosenkopf, Lori 1997.** *Social network effects on the extent of innovation diffusion: A computer simulation.* *Organization Science* 8(3):289-309. Theories of innovation diffusion no longer focus exclusively on explaining the rate at which innovations diffuse or the sequence in which they are adopted. They also focus on explaining why certain innovations diffuse extensively, becoming de facto standards, whereas others do not. Many of these theories specify a bandwagon process: a positive feedback loop in which increases in the number of adopters create stronger bandwagon pressures, and stronger bandwagon pressures, in turn, create increases in the number of adopters. Factors affecting if and how many times this feedback loop cycles explain if and how many potential adopters jump on a bandwagon. It is argued that one important factor has not yet been incorporated into these theories: the structure of social networks through which potential adopters of innovations find out information about these innovations which can cause them to adopt these innovations. It is proposed that both the number of network links, as well as small, seemingly insignificant idiosyncrasies of their structures, can affect the extent of an innovation's diffusion among members of a social network.
- Abramo, Luis; Carrillo, Jorge; Toledo, Enrique de la Garza; Leite, Marcia de Paula; 1997.** *The institutionalization of the sociology of work in Latin America.* *Work & Occupations* 24(3):348-363. An overview of the recent intellectual history of the sociology of work in Latin America contextualizes the history in economic globalization and restructuring and political institutions in Latin America. The 3-stage intellectual history addresses the development of a Latin American discipline whose theoretical models and empirical research strategies reflect cross-national similarities and variations in work, workers, and workplaces within Latin America and questions the acritical application of European and North American theoretical and research approaches. The analysis also describes the important role of social networks in the institutionalization of the discipline, including the establishment of the Latin American Sociology of Work Association in 1993.
- Achrol, Ravi S 1997.** *Changes in the theory of interorganizational relations in marketing: Toward a network paradigm.* *Journal of the Academy of Marketing Science* 25(1): 56-71 The marketing environment in the 21st century promises to be knowledge rich and very turbulent. The classic, vertically integrated, multidivisional organization, so successful in the 20th century, is unlikely to survive in such an environment. The evidence indicates it will be replaced by new forms of network organization consisting of large numbers of functionally specialized firms tied together in cooperative exchange relationships. A study explores the characteristics of 4 types of network organizations that may represent prototypes of the dominant organizations of the next century. These include the internal market network, the vertical market network, the intermarket network and the opportunity network. The economic rationale and the types of coordination and control mechanisms driving network organizations are very distinct from those studied under the current exchange or dyadic paradigm. The kinds of changes involved in key variables and their in meanings in moving from a dyadic view of exchange to a network view are analyzed.
- Anonymous 1997.** *Asking for trouble.* *Economist* 344(8029):70-71. People are often scared to report statistics on the prevalence of the grimmer social and physical ills, such as rape or HIV infection, so the official sources for such statistics (e.g., police or hospital reports) are likely to be underestimates - possibly big ones. The solution, according to researchers, is simple. Instead of asking people, ask their

friends.

**Ansell, Christopher K. 1997.** *Symbolic Networks: The Realignment of the French Working Class, 1887-1894.* *American Journal of Sociology* 103(2):359-90. How can abstract symbols provide the basis for organizational cohesion? In the early 1890s, the general strike provided such a symbol for French trade unions. In rallying around this symbol, the unions broke free from competing political loyalties and brought about a fundamental realignment of the French labor movement. The article argues that organizational cohesion emerges through the interplay between powerful symbols, political discourse, and social or interorganizational networks. Using archival records and a statistical analysis of the watershed vote for the general strike, the author demonstrates how the organizing power of this symbol was embedded in local multi-trade union federations known as *bourses du travail* and in the corporatist discourse they evoked.

**Antonucci, TC; Fuhrer, R; Dartigues, JF 1997.** *Social relations and depressive symptomatology in a sample of community-dwelling French older adults.* *Psychology of Aging* 12(1):189-95. This study examined the association between social relations and mental health, specifically the relative contribution of social networks and social support to depressive symptomatology. The culturally unique representative sample consisted of 3,777 noninstitutionalized older persons living in southwestern France. The findings indicated that French older adults generally had more than 8 people in their networks, their networks consisted mostly of family members, and they felt understood by most of their network members. These older adults reported being satisfied with their social relations. Sociodemographic variables contribute ( $R^2 = .143$ ) to depressive symptomatology, as did social network (incremented  $R^2 = .033$ ) and social support (incremented  $R^2 = .09$ ) variables. Sociodemographic, social network, and social support variables together increased the variance explained still further (incremented  $R^2 = .108$ ). Results were consistent with similar analyses in the U.S. and indicated that social support variables account for more variance in depressive symptomatology

than social network variables.

**Assaad, Ragu 1997.** *Ties, Social Networks, and Segmented Labor Markets: Evidence from the Construction Sector in Egypt.* *Journal of Development Economics* 52(1):1-30 This paper tests for rationing of entry into craft occupations in the construction labor market in Egypt and investigates whether entry is rationed according to regional origin and access to kinship and other social networks. The author uses a modified version of A. D. Roy's (1951) model of occupational choice which allows for the existence of costs of entry into craft occupations. Data from a 1988 survey of construction workers is used to estimate the model and test for rationing. The results confirm the existence of rationing according to a worker's regional background but are inconclusive with respect to kinship ties and social networks.

**Barkey, Karen; Van Rossem, Ronan 1997.** *Networks of Contention: Villages and Regional Structure in the Seventeenth Century Ottoman Empire.* *American Journal of Sociology* 102(5): 1345-82. This article analyzes peasant contention in 17th-century Ottoman villages. The authors argue that peasant contention results from the position of the village in the regional structure, with village-level organization providing the means for contention. The article uses court records to reconstruct the formal and informal networks within and across villages in western Anatolia. Under conditions of state and market expansion, those villages in intermediate positions in the regional structure tend to experience the vagaries of these changes more than central or isolated villages. Those intermediate villages are also most prone to contention. Cooperative village organization is also found to promote contention.

**Bartfai, Guszti; White, Roger 1997.** *Adaptive Resonance Theory-based Modular Networks for Incremental Learning of Hierarchical Clusterings.* *Connection Science* 9(1):87-112. This paper introduces HART-S, a new modular neural network (NN) that can incrementally learn stable hierarchical clusterings of arbitrary sequences of input patterns by self-organization. The network is a

cascade of adaptive resonance theory (AR7) modules, in which each module learns to cluster the differences between the input pattern and the selected category prototype at the previous module. Input patterns are first classified into a few broad categories, and successive ART modules find increasingly specific categories until a threshold is reached, the level of which can be controlled by a global parameter called 'resolution'. The network thus essentially implements a divisive (or splitting) hierarchical clustering algorithm: hence the name HART-S (for 'hierarchical ART with splitting). HART-S is also compared and contrasted with HART-Y (for 'hierarchical ART with joining), another variant that was proposed earlier by the first author. The network dynamics are specified and some useful properties of both networks are given and then proven. Experiments were carried out on benchmark data sets to demonstrate the representational and learning capabilities of both networks and to compare the developed clusterings with those of two classical methods and a conceptual clustering algorithm. A brief survey of related NN models is also provided.

**Bartholomew, Susan 1997.** National systems of biotechnology innovation: Complex interdependence in the global system. *Journal of International Business Studies* 28(2):241-266. The relationship between national institutional context and the development of biotechnology in the US, UK, Japan, and Germany is explored. National patterns in biotechnology R&D are linked to the configuration of country-specific institutional features into a system of innovation which supports (or impedes) the accumulation and diffusion of knowledge between the scientific and industrial communities. Building on this comparative analysis, it is argued that the particular characteristics of national systems of biotechnology innovation form the basis for complex interdependence within the global system, through international technological cooperation and the cross-border adoption and adaptation of institutional forms and practices. Implications for national technological advantage and the stability of national institutional systems are discussed.

**Bass, Lee Ann; Stein, Catherine H. 1997.**

**Comparing the structure and stability of network ties using the Social Support Questionnaire and the Social Network List.** *Journal of Social & Personal Relationships* 14(1):123-132. Compared the structure and stability of personal networks elicited by 2 popular network assessment instruments. 102 Caucasian undergraduates (mean age 20.4 yrs) at a midwestern university completed the Social Support Questionnaire (SSQ) and the Social Network List (SNL) twice over a 4-wk interval. Repeated-measures ANOVA and multivariate analysis of variance (MANOVA) showed that at both times of measurement, respondents delineated significantly larger networks using SNL than using the SSQ, with a larger average number of friends being elicited by the SNL. Respondents averaged significantly higher global network satisfaction ratings for SSQ networks relative to SNL networks at both times of measurement. More of the same individual network members' names were repeated at the 2nd time of measurement and more new network members were added at the 2nd time of measurement on the SNL than on the SSQ.

**Bates, Kimberly A 1997.** The role of coercive forces in organization design adoption. *Academy of Management Review* 22(4):849-851. In their article, Integrating Transaction Cost and Institutional Theories: Toward a Constrained-Efficiency Framework for Understanding Organizational Design Adoption, Roberts and Greenwood (1997) combine transaction cost economics and institutional theory to explain how firms make organizational design adoption choices, based on decision makers' preconscious, institutionally determined set of candidate organization designs and postconscious assessments of their efficiency. The constrained-efficiency framework makes an important contribution toward creating a synthesis of the two perspectives that is neither under- nor oversocialized.

**Baxter, Leslie A.; Mazanec, Michael; Nicholson, John; Pittman, Garth; Smith, Kathy; West, Lee 1997.** Everyday Loyalties And Betrayals In Personal Relationships. *Journal of Social and Personal Relationships* 14(5):655-678. Scholars typically have conceptualized loyalty (and its opposite, betrayal) as a manifestation of individual dispositions of a

state-like or trait-like nature. By contrast, the present study takes a dialectical perspective, arguing that loyalty is a social experience in which relationship parties face a cross-current of competing and oppositional loyalty demands. As a consequence, when parties are loyal to one relational expectation they simultaneously are likely to be disloyal to another expectation. Two-hundred and seventy-three informants provided accounts of everyday competing loyalties of two kinds for a friendship and for a romantic relationship: external competing loyalties in which one faces a dilemma between the relationship and some other demand outside the boundary of the dyad; and internal competing loyalties in which one faces a dilemma between one relational expectation and another within the boundary of the dyad. We analyzed the 1092 accounts using the constant comparative method, resulting in nine kinds of external competing loyalty dilemmas and six kinds of internal competing loyalty dilemmas. In addition, findings address how relationship parties managed the dilemmas.

**Bearman, Peter 1997. Generalized Exchange.** *American Journal of Sociology* 102(5): 1383-1415. Generalized exchange, in which sections of a tribe exchange women in a cycle and thus guarantee social solidarity, was induced from models of the norms governing classificatory kinship systems. A blockmodel analysis of one aboriginal tribe yields sections that serve as marriage classes in a generalized exchange system, though the norms that govern kinship would fail to manifest, if followed, a cycle for exchange. Generalized exchange systems emerge from inequalities exogenous to kinship system, specifically gerontocracy. Models of norms are weak predictors of actual exchange structures. Models of relations yield insight into the etiology of systems that build social solidarity from social exchange.

**Beeman, Sandra K. 1997. Reconceptualizing social support and its relationship to child neglect.** *Social Service Review* 71(3):421-41. This article reports on a study of the social support and social network relationships of neglecting and nonneglecting, low-income, single, African-American mothers. This study found few differences in the structural and interactional characteristics of their social

networks but found key differences in their perceptions of their relationships and interactions. Nonneglecting mothers approached relationships with a balance of independence and mutuality, and interactions were characterized by trust, reciprocity, and flexibility. Neglecting mothers were more dependent on others, and interactions were characterized by conflict, distrust, and lack of mutuality. The importance of considering perceptions of characteristics of social support in practice and research is discussed.

**Berman, Carol M.; Rasmussen, K. L. R.; Suomi, Stephen J. 1997. Group size, infant development and social networks in free-ranging rhesus monkeys.** *Animal Behaviour* 53(2): 405-421. Examined changes in maternal behavior, infants' social milieus and infants' social networks as a function of changes in group size and composition among free-ranging rhesus monkeys. Data were analyzed for 10 group-years representing a single social group during periods of rapid expansion and fissioning, 2 daughter groups following fissioning and an unrelated group that did not undergo fissioning. As group size expanded, infants found themselves near larger numbers of group members and smaller proportions of close kin. Mothers spent more time near their infants and sought more proximity with them. Infants developed social networks that were more highly kin biased. When the groups fissioned, these trends reversed. Significant correlations were found between group size, mother-infant interaction and infant social networks across all group-years. Individual variation in the degree to which infant social networks were kin biased was related both directly to the infant's social milieu and indirectly to its relationship with its mother. Demographic influences on developmental processes can lead to progressive changes in social structure in the absence of resource scarcity.

**Bian, Yanjie 1997. Bringing Strong Ties Back In: Indirect Ties, Network Bridges, and Job Searches in China.** *American Sociological Review* 62(3):366-385. Mark Granovetter's (eg, 1973) "strength-of-weak-ties" argument is used to analyze the institution for assigning jobs in the People's Republic of China, with distinctions made between (1)

- information & influence that flow through networks during job searches; & (2) direct & indirect ties used by job seekers. Analysis of 1988 survey data (N = 1,008 adults in Tianjin) shows that personal networks (guanxi) are used to influence authorities who, in turn, assign jobs as favors to their contacts, which is a type of unauthorized activity facilitated by strong ties characterized by trust & obligation. Findings indicate that (A) jobs are acquired through strong ties more frequently than through weak ties; (B) both direct & indirect ties are used to obtain help from job-assigning authorities; (C) job seekers & their ultimate helpers are indirectly connected through intermediaries to whom both are strongly tied; & (D) job seekers using indirect ties are more likely to obtain better jobs than those using direct ties.
- Bienenstock, Elisa Jayne; Bonacich, Phillip** 1997. **Network Exchange as a Cooperative Game.** *Rationality and Society* 9(1):37-65. Presents parallels between network exchange experiments & N-person cooperative games with transferable utility, to show how game theory can assist network exchange researchers, not only in predicting outcomes, but in properly specifying the scope of their models. Illustrated is how utility, strategy, & c-games, concepts found in game theory, could be used by exchange theorists to help them reflect on their models & improve their research design. One game-theoretic solution concept, the kernel, is compared to recent network exchange algorithms as an illustration of how easy it is to apply game theory to the exchange network solution. Also illustrated are some advantages of using a game theory solution concept to model network exchange.
- Bond, Charles F. Jr.; Horn, Elizabeth M.; Kenny, David A.** 1997. **A model for triadic relations.** *Psychological Methods* 2(1):79-94. Psychologists have analyzed dyadic data with a social relations model (D. A. Kenny, 1994). This article develops an analogous model for triadic data. This triadic relations model, a 3-way random-effects analysis of variance, can estimate 7 variances and 16 covariances from a round-robin of 3-person interactions. This article applies this model to perceptions of liking among 72 college-student acquaintances. These variance-components methods could also be used to study cognitive balance, social networks, social perception, and group performance.
- Borgatti, Stephen P., Everett, Martin G.** 1997. **Network analysis of 2-mode data.** *Social Networks* 19(3):243-270. Network analysis is distinguished from traditional social science by the dyadic nature of the standard data set; whereas in traditional social science the monadic attributes of individuals are studied, network analysis studies dyadic attributes of pairs of individuals. These dyadic attributes (e.g., social relations) may be represented in matrix form by a square 1-mode matrix. In contrast, the data in traditional social science are represented as 2-mode matrices. However, network analysis is not completely divorced from traditional social science, and often has occasion to collect and analyze 2-mode matrices. Furthermore, some of the methods developed in network analysis have uses in analyzing non-network data. The authors discuss ways of applying and interpreting traditional network analytic techniques to 2-mode data, as well as developing new techniques. Three areas are covered in detail: displaying 2-mode data as networks, detecting clusters, and measuring centrality.
- Bosworth, H.B.; Schaie, K.W.** 1997. **The relationship of social environment, social networks, and health outcomes in the Seattle Longitudinal Study: two analytical approaches.** *Journals of Gerontology Series B: Psychological Sciences & Social Sciences* 52(5):197-205. This study examined the relation of social networks and perceived social environment to health outcomes and cost utilization over a 1-year period in a community sample of 387 (173 males, 214 females). Two analytical strategies, a variable-oriented approach and a subject-oriented approach, were used to complement each other: structural equation modeling assessed the direct relationship between social relationships and health, while cluster analysis examined how social relationship patterns were related to health outcomes. Lower levels of perceived social environment were associated with an increased number of hospital visits. For unmarried individuals, increased age was associated with greater medical usage and estimated total health care

cost, while low perceived social environment was related to a greater number of doctor visits. Among married individuals, women had more frequent doctor visits, medication usage, estimated outpatient costs, and primary care visits. Married individuals with low levels of social networks had increased total health care costs, outpatient costs, and primary care visits. Cluster analysis was used to group individuals by characteristics of perceived social environment and social networks. Members of the cluster groups with greater health problems were more likely to be isolated, had the least social contact, and had lower levels of education and income. Including subject-oriented approaches is useful in complementing more popular regression methods for data analysis.

**Brewer, Devon D. 1997. No associative biases in the first name cued recall procedure for eliciting personal networks. *Social Networks* 19(4):345-353.** 1,525 respondents from a representative sample of adult residents of the state of Florida participated in a telephone survey on personal networks (C. McCarty et al, 1995). McCarty et al elicited samples of alters from respondents' personal networks with a first name cued recall interview procedure. This paper reports an assessment of associative biases involved with this technique in a further evaluation of the representativeness of the alter samples elicited with this method. Associative biases would be present if successively recalled alters are more likely to know each other or belong to the same social context (e.g., work, family, school) than alters not recalled successively. Such biases, if present, could influence the characteristics, and thus the representativeness, of the set of alters elicited, such as the density of ties. Analyses indicate that there are no associative biases in the first name cued recall procedure. Future research should investigate the possibility of associative biases in other methods for eliciting personal networks.

**Brians, Craig Leonard 1997. Residential mobility, voter registration, and electoral participation in Canada. *Political Research Quarterly* 50(1):215-28.** This paper tests two propositions advanced to explain reduced voter turnout among the residentially mobile: (1) when citizens have a personal responsibility to

re-register following a move, this poses a participation barrier and reduces turnout; (2) the act of moving severs the social networks that normally provide citizens with the information and support to make political choices, thereby reducing turnout. These alternative explanations are evaluated using Canadian national election data. The analysis reinforces previous research asserting the importance of registration barriers in reducing the turnout of those who have recently moved. Additionally, I find that movers' social ties play an independent role in their turnout, with moving particularly attenuating unmarried citizens' turnout. These findings are extended to suggest that recent U.S. initiatives facilitating voter registration may produce less than previously predicted turnout gains among the mobile.

**Browning, Christopher R.; Laumann, Edward O. 1997. Sexual Contact Between Children And Adults: A Life Course Perspective. *American Sociological Review* 62:540-560.** We adjudicate between two competing models of the long-term effects on women of sexual contact in childhood. The psychogenic perspective conceptualizes adult-child sexual contact as a traumatic event generating intense affect that must be resolved. Behavioral attempts to deal with the trauma of adult-child sexual contact can take opposing forms—some victims will engage in compulsive sexual behavior while others withdraw from sexual activity. The more severe the sexual contact, the more adverse the long-term effects (including sexual dysfunction and diminished well-being). From our alternative life course perspective, sexual contact with an adult during childhood provides a culturally inappropriate model of sexual behavior that increases the child's likelihood of engaging in an active and risky sexual career in adolescence and adulthood. These behaviors, in turn, create long-term adverse outcomes. Using data from the National Health and Social Life Survey, we find evidence of heightened sexual activity in the aftermath of adult-child sex (predicted by both perspectives), but we find no evidence of a tendency to avoid sexual activity (predicted by the psychogenic perspective). Moreover, we find little evidence to support the hypothesis that the severity of the sexual contact increases the likelihood of long-term adverse outcomes.

In contrast, we find strong evidence that sexual trajectories account for the association between adult-child sex and adult outcomes.

**Burke, Peter J. 1997. An identity model for network exchange.** *American Sociological Review*, 62(1):134-51. Network exchange theory has developed primarily as a static, structural theory of power and dependence in networks. I introduce a dynamic model of the exchange process in which network nodes are based on a model of identity processes as given by identity theory. That is, I use the assumptions of identity theory to model the identity of a "typical" experimental subject whose primary goal is to participate in exchanges in an experimental paradigm. Computer simulations of the exchange process based on this identity model then generate predictions about the power advantage of particular nodes (actor's positions) relative to other nodes in a variety of networks. The resulting predictions correspond closely with results obtained in published experiments that have been interpreted as supporting network exchange theory. In addition, varying the characteristics of the identity model in the simulation reveal the interaction between individual (identity) and structural (network) characteristics in determining power and process in the network. I also show how a process model, like the one simulated, allows us to understand the exchange process over the long run, which can differ considerably from the usual short-term laboratory experiment.

**Burt, Ronald S. 1997. The contingent value of social capital.** *Administrative Science Quarterly* 42(2):339-365 A paper presents argument and evidence for a structural ecology of social capital that describes how the value of social capital to an individual is contingent on the number of people doing the same work. The information and control benefits of bridging the structural holes - or, disconnections between nonredundant contacts in a network - that constitute social capital are especially valuable to managers with few peers. Such managers do not have the guiding frame of reference for behavior provided by numerous competitors, and the work they do does not have the legitimacy provided by numerous people doing the same kind of work. The study uses network and performance data on a proba-

bility sample of senior managers to show how the value of social capital, high on average for the managers, varies as a power function of the number of people doing the same work.

**Burt, Ronald S. 1997. A note on social capital and network content.** *Social Networks* 19(4):355-373. As a guide to selecting name generators for social capital research, the author used network data on a probability sample of 284 heterogeneous senior managers to describe how they sort relations into kinds, and how the kinds vary in contributing to social capital. Managers sort relations on 2 dimensions of strength, intimacy (especially close vs distant) vs activity (frequent contact with new acquaintances vs rare contact with old friends), and with respect to 2 contents, personal discussion (confiding and socializing relations) vs corporate authority (the formal authority of the boss and informal authority of essential buy-in). Comparing name generators for their construct validity as indicators of social capital, the author computed network constraint from different kinds of relations, and correlated constraint with early promotion. The correlation was strong for the network of personal relations, zero for the network of authority relations, and strongest for personal and authority relations together.

**Cable, Sherry; Degutis, Beth 1997. Movement outcomes and dimensions of social change: the multiple effects of local mobilizations.** *Current Sociology* 45(3):121-36. Social movements are usually measured a success or failure based on how they achieve the goal set at the beginning when the actual impact is usually multidimensional. The impact of a social mobilization against a landfill in central New York state, for example, was felt on the individual, community and macro structural level as well as within the mobilization organization itself. Even when the stated goal is not achieved, concessions to address citizen concerns and social networks developed during the mobilization can be long-term, positive effects of the mobilization.

**Carley, Kathleen M.; Harrald, John R. 1997. Organizational learning under fire.** *American Behavioral Scientist* 40(3):310-33. Learning is one of the mechanisms through



which organizations come to prevent and minimize the impact of natural disasters. Although a pattern of responses can be learned from experiences, such are bound to change as another disaster comes. Such step-wise learning, however, does not guarantee the gaining of the benefits of improved performance since organizations are bound by subjective evaluation by the elements in the environment, particularly the press which does not match objective judgment. This leaves the organization with a mere perception of improved performance.

**Carpi, Juan A.; Torrejon, Miguel; Such, Juan 1997. Flexible Production, Managerial Networks, and Territorial Systems of Small and Medium-Sized Firms. The Valencian Textile Industry. *Sociologia del Trabajo* 30:21-42.** Examines diverse forms of managerial networks based on a case study of the textile industry in Valencia, Spain, involving interviews with 20 key persons & 66 in managerial positions. Results indicate that highly dynamic, organized firms tend to have networks based on strategic coordination, while those of less dynamic firms tend to be more flexible, regulated by the market or some other external mechanism. It is concluded that diversity of persons, decisions, & strategies within firms is largely responsible for the diversity of networks, & that a knowledge of managerial strategy is basic to understanding the evolution of a network.

**Catfolis, Thierry; Meert, Kurt 1997. Hybridization and Specialization of Real-time Recurrent Learning-based Neural Networks. *Connection Science* 9(1):51-69.** In this article, three different methods for hybridization and specialization of real-time recurrent learning (RTRL)-based neural networks (NNs) are presented. The first approach consists of combining recurrent networks with feedforward networks. The second approach continues with the combination of multiple recurrent NNs. The last approach introduces the combination of connectionist systems with instructionist artificial intelligence techniques. Two examples are added to demonstrate properties and advantages of these techniques. The first example is a process diagnosis task where a hybrid NN is connected to a knowledge-based system. The second example is a NN consisting

of different recurrent modules that is used to handle missing sensor data in a process modeling task.

**Chang, Hedy Nai-Lin 1997. Democracy, diversity, and social capital. *National Civic Review* 86(2):141-8** How we understand and respond to our diversity is essential to any discussion of social policy in this country. The challenge is to design strategies that will foster social capital that bridges the gaps between diverse groups living within our communities.

**Cohen, S; Doyle, W. J.; Skoner, D. P.; Rabin, B. S.; Gwaltney, J. M. Jr 1997. Social ties and susceptibility to the common cold. *Journal of the American Medical Association* 277(24):1940-4.** To examine the hypothesis that diverse ties to friends, family, work, and community are associated with increased host resistance to infection. DESIGN: After reporting the extent of participation in 12 types of social ties (eg, spouse, parent, friend, workmate, member of social group), subjects were given nasal drops containing 1 of 2 rhinoviruses and monitored for the development of a common cold. SETTING: Quarantine. PARTICIPANTS: A total of 276 healthy volunteers, aged 18 to 55 years, neither seropositive for human immunodeficiency virus nor pregnant. OUTCOME MEASURES: Colds (illness in the presence of a verified infection), mucus production, mucociliary clearance function, and amount of viral replication. RESULTS: In response to both viruses, those with more types of social ties were less susceptible to common colds, produced less mucus, were more effective in ciliary clearance of their nasal passages, and shed less virus. These relationships were unaltered by statistical controls for prechallenge virus-specific antibody, virus type, age, sex, season, body mass index, education, and race. Susceptibility to colds decreased in a dose-response manner with increased diversity of the social network. There was an adjusted relative risk of 4.2 comparing persons with fewest (1 to 3) to those with most (6 or more) types of social ties. Although smoking, poor sleep quality, alcohol abstinence, low dietary intake of vitamin C, elevated catecholamine levels, and being introverted were all associated with greater susceptibility to colds, they could only partially account for the relation between social

network diversity and incidence of colds. **CONCLUSIONS:** More diverse social networks were associated with greater resistance to upper respiratory illness.

**Davern, Michael 1997. Social networks and economic sociology: A proposed research agenda for a more complete social science.** *American Journal of Economics & Sociology* 56(3):287-302. The social network metaphor is widely used by sociologists to study socioeconomic behavior and processes. The use of social networks generally takes place within the ranks of sociology. However, a more complete social science would result by combining work being done on social networks within sociology with mainline economic theory. The insights from such a research agenda help to better understand socioeconomic behavior. With this in mind, an attempt is made to demonstrate the utility of the network metaphor to economists. This objective will be accomplished through developing four basic components of social networks, and using them to navigate through the existing literature in economic sociology. Furthermore, topics for future research in which social networks can provide contributions to the explanation of socioeconomic behavior are explored as well.

**Davis, Gerald F.; Greve, Henrich R. 1997. Corporate Elite Networks and Governance Changes in the 1980s.** *American Journal of Sociology* 103(1):1-37. Changes in corporate governance practices can be analyzed by linking the adaptations of individual firms to the structures of the networks in which firms' decision makers are embedded. Network structures determine the speed of adaptation and ultimate patterns of prevalence of governance practices by exposing a firm to particular role models and standards of appropriateness. The authors compare the spreads of two governance innovations adopted in response to the 1980s takeover wave: poison pills (which spread rapidly through a board-to-board diffusion process) and golden parachutes (which spread slowly through geographic proximity). The study closes with a discussion of networks as links between individual adaptation and collective structures.

**Dodd, Sarah Drakopoulou 1997. Social**

**network membership and activity rates: Some comparative data.** *International Small Business Journal* 15(4):80-87. Data from the British Household Panel Survey are used to compare levels of social networking as reported by samples of business owners, self-employed and employed respondents. The findings show weak support for Birley et al.'s (1991) argument that the self-employed in general, and business owners in particular, are likely to exhibit higher levels of social networking than their employed counterparts. In terms of both membership and participation rates, the self-employed report very similar patterns and levels of involving in social networks to wage and salary earners.

**Dodier, Nicolas 1997. Comments on the Consciousness of the Collective in Sociotechnical Networks. Remarques sur la conscience du collectif dans les reseaux sociotechniques.** *Sociologie du Travail* 39(2):131-148. Examines sociotechnical networks in the organization of work to understand the roles of technical objects, the collective conscience, & communication networks. Instrumentalist approaches, which see such objects as tools, & semiological approaches, which view them as signs, are too rigid in categorizing the role of objects. Instead, the sociology of work has theorized a relatively autonomous role for objects. Particular focus is given to networks of communication as a new space for the collective conscience. Two consequences of this changing collective space are a more inclusive collective & an increasing distance from the collective for those not connected.

**Donckels, Rik; Lambrecht, Johan 1997. The network position of small businesses: an explanatory model.** *Journal of Small Business Management* 35(2):13-26. More rigid competition, constantly changing market trends and stiff government regulations are prompting small businesses to turn to networking to survive in such ever-changing environmental conditions. The term 'network' refers to the relationship of entrepreneurs and their small businesses with the outside world. Through an explanatory model of the network position of small businesses, the impact of entrepreneur- and enterprise-related factors on the network structure is examined. Findings suggest that highly trained entrepreneurs, particularly of

larger and growth-oriented businesses, have a wide network position. This indicates the importance of establishing networks for small businesses.

**Duhan, Dale F; Johnson, Scott D; Wilcox, James B; Harrell, Gilbert D 1997. Influences on consumer use of word-of-mouth recommendation sources. *Journal of the Academy of Marketing Science* 25(4):283-295** The development and testing of a theoretical model of the initial stages of recommendation-based decision making by consumers is reported. Although consumers use a variety of recommendation sources, they have different motivations for the use of different sources. The model focuses on the factors that influence the likelihood of consumers using strong-tie sources (e.g., friends and family) and weak-tie sources (e.g., acquaintances or strangers) of recommendations. The factors used in the model are the prior knowledge level of the consumer about the product being considered, the perceived decision task difficulty level, and the type of evaluative cues sought by the consumer. Hypotheses are tested using data collected in an extensive field study with consumers. Two paths of influence on the use of recommendation sources are proposed and confirmed.

**Edmunds, W. J.; O'Callaghan, C. J.; Nokes, D. J. 1997. Who mixes with whom? A method to determine the contact patterns of adults that may lead to the spread of airborne infections. *Proceedings of the Royal Society of London Series B: Biological Sciences* 264(1384):949-57.** Although mixing patterns are thought to be important determinants of the spread of airborne infectious diseases, to our knowledge, there have been no attempts to directly quantify them for humans. We report on a preliminary study to identify such mixing patterns. A sample of 92 adults were asked to detail the individuals with whom they had conversed over the period of one, randomly assigned, day. Sixty-five (71%) completed the questionnaire, providing their age, the age of their contacts and the social context in which the contacts took place. The data were analysed using multilevel modelling. The study identified, and allowed the quantification of, contact patterns within this sample

that may be of epidemiological significance. For example, the degree of assortativeness of mixing with respect to age was dependent not only on the age of participants but the number of contacts made. Estimates of the relative magnitude of contact rates between different social settings were made, with implications for outbreak potential. Simple questionnaire modifications are suggested which would yield information on the structure and dynamics of social networks and the intensity of contacts. Surveys of this nature may enable the quantification of who acquires infection from whom and from where.

**Faber, Jan; Koppelaar, Honk 1997. Chaos Theory and Social Science: A Methodological Analysis. *Quality and Quantity* 28(4):421-433.** Examines, in general, the relevance of chaos theory for social science and, in particular, looks at how chaos theory, as a specialty of nonlinear dynamics in mathematics, can help generate theoretical explanations of social phenomena. A brief outline of chaos, nonlinear dynamics and their assessment from observations of social phenomena are given in the first two sections of the article. The third section is devoted to the explanation of the dynamics of social phenomena and explanations, which can be derived from a fitted and not falsified nonlinear dynamical model. Problematic aspects of theory formation in social science on the basis of fitted mathematical models of chaos are also discussed. The last section of the article presents conclusions to be drawn from these analyses.

**Fararo, Thomas J. 1997. Reflections on Mathematical Sociology. *Sociological Forum* 12(1):73-101.** A personal & historical review of the development of mathematical sociology, focusing on links between early innovations/interests & recent developments. Focus is on four topics: (1) the origins of mathematical sociology & its early achievements; (2) the cognitive interests & values of mathematical sociologists in relation to ideas associated with the founders of sociology; (3) the scope of mathematical contributions in terms of the general components of human action & society; & (4) the problematic speciality status of mathematical sociology. Future directions of mathematical sociology are discussed, includ-

ing group processes, social networks, rational choice sociology, organizational ecology, & integrative theory development.

**Feeley, Thomas J.; Barnett, George A. 1997.** **Predicting employee turnover from communication networks.** *Human Communication Research* 23(3):70-387. Explored 3 social network models of employee turnover: a structural equivalence model, a social influence model, and an erosion model. It was predicted that structurally equivalent individuals would be more likely to behave similarly (i.e., leave or stay at their position). The social influence model predicted that employees with a greater percentage of direct communication links with leavers would be more likely to leave their job. The erosion model posited that individuals located on the periphery of a social network would be more likely to leave their job or fall off the edges of the social network. 170 super-market employees completed a communication network questionnaire asking them to identify the people with whom they communicate at work. network self-report data were analyzed using NEGOPY and UCINET software. Results provide support for all 3 models of turnover, with the erosion model explaining more variance than the other models.

**Fein, Adam J; Anderson, Erin 1997.** **Patterns of credible commitments: Territory and brand selectivity in industrial distribution channels.** *Journal of Marketing* 61(2):19-34. A new theoretical rationale is developed that explains the paired existence of both a manufacturer's decision to limit the number of intermediaries operating in a specific geographic market and a distributor's decision to limit brand assortment in a product category. Using transaction cost reasoning, it is suggested the channel selectivity agreements can be understood as interrelated exchange of pledges, or credible commitments, that counterbalance exposure to opportunism and neutralize sources of relationship instability, thereby strengthening an interorganizational relationship. The empirical results, which are based on dyadic data from 362 manufacturer-distributor relationships, are broadly supportive of this framework.

**Feld, Scott L.; Robinson, Dawn T. 1998.**

**Secondary Bystander Effects on Intimate Violence: When Norms of Restraint Reduce Deterrence.** *Upcoming in Journal of Social and Personal Relations* 15(11a) April 1998.

Research on bystander effects indicates that bystanders encourage individuals to behave in conformity with norms. In modern western society, there are norms against stronger actors using violence against weaker actors. To the extent that the presence of a bystander reduces the likelihood that stronger actors use violence toward weaker actors, we suggest that weaker actors may become more likely to use violence toward stronger actors because of their reduced risks from retaliation. In the present study, subjects indicated their own likelihoods of using violence in hypothetical situations of boyfriend/ girlfriend conflicts with and without bystanders. As theoretically predicted, the results showed that presence of a bystander decreased the use of violence by males toward females, and increased the use of violence by females toward males. We suggest that a greater understanding of indirect effects on interpersonal relationships is essential for both social theory and policy.

**Feliciano, K. V.; Kovacs, M. H. 1997.** [Opinions about disease among members of the social network of patients with Hansen's disease in Recife]. *Opinioes sobre a doenca entre membros da rede social de pacientes de hanseniose no Recife.* *Rev Panam Salud Publica (UNITED STATES)* 1(2):112-8. This article describes a study done in Recife, Brazil, between November 1993 and July 1994 to explore the opinions of the members of the social network (for example, family members, friends, and neighbors) of carriers of Hansen's disease regarding their estimation, interpretation, and management of physical manifestations of the disease in the time leading up to diagnosis. The sample consisted of 93 members of the social network, ranging in age between 20 and 70 years, who supported the course of action of 83 patients diagnosed in the study period. The analysis sought to detect differing capacities among the members of the patients' social network to discriminate between persons classified as cases (presence of disabilities or precursor lesions) or controls. The study found a lack of information about transmission of Hansen's disease and revealed a transitional

phase in which there was expectation of cure along with a stigmatizing view of the consequences of the disease. Only one-quarter of the study subjects suspected prior to diagnosis that the patient had Hansen's disease, which suggests low perception of the risk represented by the disease and reinforces the idea that its physical manifestations can be invisible. The results reveal a profile of perception and management of Hansen's disease that favors its propagation and the development or worsening of its physical and social consequences.

**Fershtman, Meir 1997. Cohesive group detection in a social network by the segregation matrix index. *Social Networks* 19(3):193-208.** The number and intensity of the interactions between cohesive group members are higher than those with other actors. The segregation matrix index (SMI), which is based on the relative number and intensity of inward to outward interactions, serves as a measure of the cohesiveness of a group (M. Fershtman and M. Chen, 1993). The author introduces the SMI in binary and valued graphs, and proposes an operational definition of a cohesive group based on the SMI, along with an algorithm for detecting cohesive groups in (binary or valued) social networks. Two actual cases are examined to demonstrate the efficiency of the algorithm.

**Friedman, Raymond A; Krackhardt, David 1997. Social capital and career mobility. *Journal of Applied Behavioral Science* 33(3):316-334.** A study examines the social conditions experienced by Asian employees in the workforce, focusing in particular on the lower returns to education that have been documented for both immigrant and US-born Asians. It is suggested that human capital translates into improved career outcomes by producing greater social capital, and it is hypothesized that those who are more socially and culturally different from the dominant group - such as native-born and immigrant Asians - are less likely to be able to turn human capital into social capital. The theory is illustrated using data from 5 work teams at a computer services division of a major bank that was staffed with a sizable number of immigrant Asians. The study found lower returns to education for Chinese and Asian Indians than for European Americans, in terms of managers' assessment of

career potential, and also found that education translated into work team centrality only for European Americans.

**Fudge, H.; Neufeld, A.; Harrison, M. J. 1997. Social networks of women caregivers. *Public Health and Nursing*, 14(1):20-7.** Social networks and the support that network members provide are important resources for family caregivers in sustaining their caregiving role. Caregivers' perceptions of support from family and friends have been linked to their health status (R. Kahn & T. Antonucci, 1980; I. Sandler & M. Barrera, 1984). The purpose of this study was to explore the social networks and types of perceived support described by women who are caregivers of cognitively impaired older adults. Content analysis was used to examine interview data from a longitudinal qualitative study of 20 women caregivers of cognitively impaired older persons. An important finding of this study was the identification of a typology of social networks of the women caregivers. The caregivers' perceptions of satisfaction with support received and experience of conflict with network members varied according to the characteristics of their social network. Those caregivers who belonged to diverse social networks reported high satisfaction with the support that they received and little or no conflict. Those caregivers with kin-dominated social networks reported little satisfaction with support received and a high degree of conflict.

**George, Gerard; Wood, D. Robley Jr; Rimler, George W.; Sturm, Phil R. 1997. How community banks use their boards to boost performance. *Journal of Retail Banking Services* 19(3):25-28.** Research reveals that community banks have a major source of strength in the members of their boards of directors, who can do much to enhance a bank's performance. Firms that recruit board members with extensive social networks and contacts are likely to increase firm performance. Access to people from different backgrounds and diverse sources of information does help board members. In general, CEOs of community banks with the highest 5-year average ROE and ROA indicated that they follow 3 basic strategies: 1. Recognize the importance of networking. 2. Take calculated risks. 3. Be responsive but

aggressive.

**Goldsmith, Daena J.; Fitch, Kristine 1997.** *The Normative Context of Advice as Social Support. Human Communication Research 23(4):454-476.* Much of the existing research on social support overlooks the communicative processes that link supportive acts to beneficial effects. The present study represents an alternative approach. The authors document the mutual goals and implications of advice and the situational, conversational, and cultural context for the evaluation of advice among some White, middle-class, U.S. Americans. On the basis of observation of 112 advice episodes and interview with 18 informants, the authors identify three dilemmas of seeking, receiving, and giving advice: Advice may be seen as helpful and caring or as butting in; advice may be experienced as honest or supportive, and seeking and taking advice may enact respect and gratitude, yet recipients reserve the right to make their own decisions. The identification of these dilemmas provides the basis for future research on the characteristics of more and less effective advice and for comparative research on advice in other speech communities.

**Grabher, Gernot; Stark, David 1997.** *Organizing diversity: evolutionary theory, network analysis and postsocialism. Regional Studies 31(5):533-45.* An alternative conception of development taken from new insights in network analysis and evolutionary theory counters the neoclassical prescriptions for the postsocialist economies. Actors of the postsocialist setting change the innovative character by recombining and redefining resources. It is argued that the social network is the actual unit of entrepreneurship that unites actors and firms within them. Furthermore, an analysis of the circuit breakers who bring economic friction to the postsocialist economies were discussed.

**Grabowski, Martha; Roberts, Karlene 1997.** *Risk mitigation in large-scale systems: Lessons from high reliability organizations. California Management Review 39(4):152-162.* A paper argues that attention should be turned away from single organizations to systems of organizations if they are to be managed in a way that reduces the potential for catastrophic outcomes in organizations. Risk

mitigation measures for large-scale systems are derived from research on high reliability organizations (HRO). The paper focuses on characteristics similar to both types of systems - which include simultaneous autonomy and interdependence, intended and unintended consequences of behavior, long incubation periods during which problems can arise, and risk migration - and shows how risk mitigation principles that evolved from HRO research can be applied to large-scale systems.

**Greenwell, Lisa; Valdez, R. Burciaga; DaVanzo, Julie 1997.** *Social ties, wages, and gender in the study of Salvadorean and Pilipino immigrants in Los Angeles. Social Science Quarterly, 78(2):559-78.* Research has begun to show that social ties influence the ways in which immigrants find jobs in a host community. This research investigates how social ties affect immigrants' employment status and wages, and how these effects may depend on community social-class composition. Methods. Data used are from a pilot survey of Salvadorean and Pilipino immigrants in two Los Angeles communities. Analyses are conducted with probit models and ordinary least squares regression models corrected for selection. Results. The findings, unlike those in many previous studies, show that strong social ties, such as family ties, affect employment status and wages. The effects, however, differ by gender. Among men, working with relatives is associated with higher wages. Among women, having non-coresident relatives in the United States is associated with higher wages. The latter finding is most plausibly a social-network effect among Salvadorean women, who live in a working-class community. Conclusions. These findings suggest that social ties are important determinants of the wage-earning potential of immigrants, and that the effects of social ties depend on community characteristics such as social-class composition.

**Groat, Malcolm 1997.** *The informal organization: Ride the headless monster. Management Accounting-London 75(4):40-42.* The role played by the "informal organization" in corporate life is widely underappreciated, both in the leading management texts and in general management practice. As a result, many modern managers do not have a comfortable mas-

tery of the workings of the informal organization and often downgrade its comparative importance. The informal organization consists of relationships that grow up in one of 2 ways: job-related networks and social networks. The shape of an informal organization and the patterns of its operation are determined by the formal structure of the organization and its culture. Because the informal organization allows and encourages open relationships and interaction between people as individuals more than as post-holders, it tends to work with much shallower status hierarchies, which can be completely level or even inverted in some instances. The very existence of an informal organization brings benefits to the overall organization through the provision of essential communication services to oil the wheels and though motivational impact of informal person-to-person interaction in the workplace.

**Guthrie, Douglas 1997. Between Markets and Politics: Organizational Responses to Reform in China. *American Journal of Sociology* 102(5): 1258-1304.** In China's economic transition, firms diversify assets through investments in the rapidly expanding service sector in response to organizational uncertainty. Using data from a random sample of firms in Shanghai, the author shows that there are two situations that cause this uncertainty: economic instability, where weak firms struggle to survive in the rapidly changing market system, and administrative instability, where large firms that were the most protected are now being forced to handle the responsibilities that were previously handled by the state. The result is that both types of firm seek stability by spreading out risk through investment in low-risk, fast-return markets, revealing much about the economic reforms.

**Heinz, John P.; Nelson, Robert; Laumann, Edward O.; Michelson, Ethan 1997. The Organization of Lawyers Work: Hemispheres, Tectonic Plate Movement, and Continental Drift. *Working Paper from the Institute for Policy Research, Northwestern University. Fall 1997.*** This paper compares findings from two surveys of Chicago lawyers, the first conducted in 1975 and the second in 1995. The earlier study indicated that the Chicago bar was then divided into two broad

sectors or "hemispheres," one serving corporations and other large organizations and a second serving individuals and small businesses. Analyses of the structure of co-practice of the fields of law in 1975 and in 1995 indicate that the hemispheres are now less distinct. The fields are less tightly connected and less clearly organized—they became more highly specialized during the intervening 20 years, and are now organized in smaller clusters. Clear indications of continuing separation of work by client-type remain, however. Estimates of the amount of lawyers' time devoted to each of the fields in 1975 and 1995 indicate that corporate practice fields now consume a larger share of Chicago lawyers' attention, while fields such as probate receive a declining percentage. Growth is most pronounced in the litigation fields, especially in business litigation. At the same time, the mean size of Chicago law firms represented in the samples increased from 27 in 1975 to 141 in 1995. The management structures of the firms have evolved from traditional hierarchies into various forms displaying characteristics of bureaucracy or formal rationality.

**Hiltz, Starr Roxanne; Wellman, Barry 1997. Asynchronous learning networks as a virtual classroom. *Communications of the ACM* 40(9):44-49** Computer-mediated communication can enable people with shared interests to form and sustain relationships and communities. Online communities provide emotional support and sociability as well as information and instrumental aid related to shared tasks. Online virtual classrooms combine the characteristics of online communities and computer-supported workgroups. An historical perspective is presented, and studies of how computer-mediated communication affects community interaction are summarized. Also presented are survey examples of different kinds of communities communicating through the Internet. Asynchronous learning networks are examined as an example of an online community.

**Hobbs, Dick 1997. Professional Crime: Change, Continuity and the Enduring Myth of the Underworld. *Sociology* 31(1):57-72.** Draws on previous ethnographic data from crime networks to explore the organization of professional crime, focusing on three case

studies - a safe breaker, a robber, & a drug entrepreneur - to illustrate the development of crime & its relationship to the larger economic environment over the latter 20th century. The myth of the underworld is introduced as part of an illusion of professionalism, unity, & ethics in criminal networks. It is concluded that the underworld represents a concept of restricted access to criminal networks; in reality, they operate in the created overworld, accessible to anyone, articulated in a local rendition of global markets. 82 References. Adapted from the source document.

**Hoffmann, J. P.; Su, S. S.; Pach, A. 1997. Changes in network characteristics and HIV risk behavior among injection drug users. *Drug and Alcohol Dependency* 46(1-2):41-51.** Studies indicate that HIV risk behaviors vary greatly among injection drug users (IDUs). The source of such variation is often ascribed to individual differences, but much of it is due to how IDUs are grouped into social networks. Nevertheless, given the turbulent and uncertain lives led by many IDUs, it would not be surprising if their social networks changed substantially over time. We used data from a study of the social networks of IDUs in Chicago and Washington, DC, to examine changes in individual behavior and network characteristics over time. The results indicated few changes in standard network measures, such as density of ties or network size, over time. However, specific network change measures, that is, indicators of movement into and out of networks, showed significant movement of network members over time. Moreover, movement of members into a network significantly predicted a higher likelihood of risky injection drug use over time. We suggest that these movements are indicative of a lack of a stable resource base among IDU networks.

**Hondagneu-Sotelo, Pierrette. 1994. Regulating the Unregulated?: Domestic Workers' Social Networks. *Social Problems* 41(1):50-6+.** Draws on 1986/87 participant observation & in-depth interviews with Mexican immigrant women (N = 17) who work as domestics in San Francisco, CA, to examine their responses to the organization of paid domestic labor as job work. It is argued that job exacerbates the privatized nature of both the

work itself & the negotiation of the employer-employee relationship, & confronts domestic workers with having to secure multiple employers. Here, the women dealt with these challenges by informally collectivizing & sharing information through social networks. Thus, what appears to be an extremely atomized labor relation for the domestic worker is mitigated by a work culture transmitted through many social interactions that are both enabling & constraining.

**Human, Sherrie E.; Provan, Keith G. 1997. An emergent theory of structure and outcomes in small-firm strategic manufacturing networks. *Academy of Management Journal* 40(2):368-403** A study compares 2 networks of small- to medium-sized manufacturing enterprises in the US wood products industry. Qualitative and survey data were collected from a sample of active participants in each network as well as from a sample of firms that were not network members (market firms) in the same industry. Using both qualitative and network analysis methodologies, a model is developed, as well as testable propositions concerning key aspects of network structure and outcomes.

**Hung, Shih-Chang; Whittington, Richard 1997. Strategies and institutions: A pluralistic account of strategies in the Taiwanese computer industry. *Organization Studies* 18(4):551-575.** The "new institutionalism" had led to increasing emphasis on the embeddedness of organizations in local social systems. Sorge (1991) and Whitley (1994) have shown, in particular, how the dominant forms of organization within countries or sectors are shaped by distinct national systems. The liability of these institutionalist approaches, however is a focus on broad comparisons that gives little access to the diversity that is often observable on the ground. Examining nine Taiwanese computer firms during the 1980s and early 1990s, a paper demonstrates that their strategies followed no singular system logic, displaying instead a wide scope for strategic diversity. It argues that this kind of diversity can be explained not by rejecting institutionalism, but by recognizing the plural systems - business, technology and political - in which the disembedded actors of modernity now engage. Such a pluralistic approach has the potential to



extend institutionalist analysis beyond the broadly comparative to the strategies of individual firms.

**Hutton, Will 1997. Cut the stranglehold of the old school tie.(elitism of former pupils of UK public schools). *The Observer* 24(1), June 29.** Former pupils of public schools such as Eton or Harrow, tend to have an unfair influence on UK society, with a privileged education which gives them not only academic qualifications but also an edge over others from the point of view of class. Such people belong to social networks enabling them to set up profitable deals. Some believe that they are unfairly criticized, but there are also those who are amazed that the system has continued.

**Ibarra, Herminia 1997. Paving an Alternative Route: Gender Differences in Managerial Networks. *Social Psychology Quarterly* 60(1):91-103.** This research uses the network-analytic concepts of homophily, tie strength, and range to explore gender differences in characteristics of middle managers' information and career support networks. When the effects of position and potential for future advancement were held constant, women's networks were less homophilous than men's. Women high in advancement potential, however, relied to a greater extent than both high-potential men and less high-potential women on close ties and relationships outside their subunits. On the basis of these findings, we suggest that different types of networks may provide alternative routes to similar career resources for men and for women.

**Johnson, J. David; Meyer, Marcy E.; Berkowitz, Judy M.; Ethington, Caroline T.; Miller, Vernon D. 1997. Testing Two Contrasting Structural Models of Innovativeness in a Contractual Network. *Human Communication Research* 24(2):320-348.** This study examined contrasting models of the impact of formal and informal structural factors and the communication environment on organizational innovativeness. Specifically, three formal structural variables (decentralization, formalization, and slack: resources), two informal structural variables (range and prominence), and two communication environment variables (communication quality and acceptance) are

posited to be antecedents of organizational innovativeness. In the traditional model, formal structural impacts are posited to be shaped by informal structure. Conversely, the coexisting model argues that both formal and informal structural variables directly affect the communication environment, which, in turn, shapes perceptions of innovativeness. Data were gathered from self-report questionnaires and network analysis communication logs completed by organizational members (N = 79) of a geographically dispersed government health information agency, the Cancer Information Service (CIS). Tests of the model demonstrate that the coexisting model is clearly superior. The results suggest that the dual role of formal and informal structures needs to be more systematically specified as we focus on innovation in new organizational forms, such as the CIS.

**Jones, Candace; Hesterly, William S.; Borgatti, Stephen P. 1997. A general theory of network governance: Exchange conditions and social mechanisms. *Academy of Management Review* 22(4):911-945.** A phenomenon of the last 20 years has been the rapid rise of the network form of governance. This governance form has received significant scholarly attention, but no comprehensive theory for it has been advanced. A theory is presented that explains under what conditions network governance has comparative advantage. The theory integrates transaction cost economics and social network theories, and asserts that the network form of governance is a response to exchange conditions of asset specificity, demand uncertainty, task complexity, and frequency.

**Kameda, Tatsuya; Ohtsubo, Yohsuke; Takezawa, Masnori 1997. Centrality in sociocognitive networks and social influence: an illustration in a group decision-making context. *Journal of Personality and Social Psychology* 73(2):296-310.** Social influence in consensus formation was examined using a notion of sociocognitive network. Given the robustness of shared information in determining group decisions, the authors propose the concept of a sociocognitive network that captures the degree of members' knowledge-sharing prior to group interaction. A link connecting a given pair of members repre-

sents the amount of information that the pair shares before interaction. As in a regular social network, a member's status can be defined by the centrality in the network; the more information a member shares with others, the more cognitively central the member is in the group. The authors hypothesized that a cognitively central member would acquire pivotal power in a group and exert more influence on consensus than would peripheral members, independently of the member's preference majority or minority status. The results of two studies supported these predictions.

**Kautz, Henry; Selman, Bart; Shah, Mehul 1997. ReferralWeb: combining social networks and collaborative filtering.**(Special Section: Recommender Systems) *Communications of the ACM* 40(3):63(3). ReferralWeb is an interactive system currently being developed for locating, visualizing and reconstructing social networks found in the World Wide Web. Studies have indicated that informal networks of friends and colleagues are among the best means of spreading information and know-how within an organization. Unlike other recommender systems, ReferralWeb does not rely on anonymous sources but on named individuals, and does not restrict users to predetermined sets of subject areas.

**Kennedy, Craig H.; Shikla, Smita; Fryxell, Dale 1997. Comparing the effects of educational placement on the social relationships of intermediate school students with severe disabilities.** *Exceptional Children* 64(1):31-48. Two groups of intermediate school students with severe disabilities were studied across one school year. One group of students participated full time in general education classrooms; the other group was supported via special education classrooms. Using a posttest-only control group design with matched comparisons, each student's social interactions, social support behaviors, and friendship networks were measured. The results indicate substantive social benefits for the general education group, relative to students who received support in special education classrooms. In particular, students in the general education group interacted more frequently with peers without disabilities, provided and received higher proportions of social support, and had larger, and more dura-

ble, networks of peers without disabilities. The findings are discussed in relation to current efforts to understand the empirical outcomes of inclusive education.

**Kilduff, Martin; Mehra, Ajay 1997. Postmodernism and organizational research.** *Academy of Management Review* 22(2):453-481. Drawing selectively from the often countervailing currents of postmodernism, an argument is made for an epistemology that combines a skepticism toward meta-narrative with a commitment to rigorous standards of enquiry in pursuit of radical challenges to accepted knowledge. Five problematics are discussed, concerning: 1. normal science, 2. truth, 3. representation, 4. style, and 5. generalizability.

**Kohler, H. P. 1997. Learning in social networks and contraceptive choice.** *Demography (UNITED STATES)* 34(3):369-83. A puzzling observation in the diffusion of modern fertility control is the persistent diversity in contraceptive practices across communities or social strata. I propose a model of "learning in social networks" to explain this diversity with the random dynamics of word-of-mouth communication. Women are uncertain about the merits of modern contraception and estimate the different qualities of available method based on imprecise information from network partners. Their contraceptive choices are determined by this estimate and by private knowledge about one's personal characteristics. This process of social learning leads to path-dependent adoption of fertility control within, and diversity in contraceptive practices across villages or social strata.

**Leicht, Kevin T; Marx, Jonathan 1997. The consequences of informal job finding for men and women.** *Academy of Management Journal* 40(4):967-987. A study examines the role that the gender of job informants plays in the job-finding process for men and women. Data on job seekers at a large bank were used to test hypotheses derived from work on social distance and gender segregation. The results suggest that jobs found via cross-gender referrals are hierarchically lower than the jobs of the informants and that women refer job seekers to gender-typical jobs more than men do.

- Leydesdorff, Loet 1997. The Non-Linear Dynamics of Sociological Reflections. *International Sociology* 12(1):25-45.** A model is presented in support of the theory of communication networks. Language is suggested to be the medium of communication in the social network, in which the rows of a matrix represent actors, communications are represented by columns, & all meanings must be viewed within the framework of context. Common languages foster mutual understanding, & translations channel language through reflexive filters. While hierarchization of communication fosters the creation of social structure, modern ethos & technological change sanction adjustments in language. Shifting paradigms, segmentation, stratification, reflection, differentiation, & self-organization shape communication.
- Leyshon, Andrew; Thrift, Nigel 1997. Spatial financial flows and the growth of the modern city. *International Social Science Journal* 49(1):41-54.** This article provides an introduction to geographical research on money and finance. Three areas of research are singled out for attention. The first consists of geographies of monetary exchange and of credit and debt which emphasizes that the history of money and of credit and debt is also a geography. The second area consists of research into international financial centres, and especially the identification of social networks which play a key role in coordinating and ordering the international financial system. The third and final area of research addressed in the article studies processes of financial exclusion, and seeks to identify territories 'abandoned' by the financial system. By illustrating that the history of money and finance is also a geography, that financial institutions currently operate from well defined urban systems, and that the net result of the operations of financial institutions is to exclude many of the peoples and places of the world, we attempt to show that institutions of money and finance are at the centre of modern economic geography.
- Luo, Jar-Der 1997. The Significance of Networks in the Initiation of Small Businesses in Taiwan. *Sociological Forum* 12(2):297-317.** This paper investigates theoretically a factor that impacts the institutional and structural environment of initiating small investments in Taiwan, namely personal relationship-networks. A potential investor needs market opportunities in order to earn profit, business organization to exploit the opportunity, and capital to initiate the business. In Taiwan's network economy the solidarity provided by 'family' networks makes small initial business organizations possible. Subcontracting systems, both horizontal and vertical make the entry-level investment low, and the decentralized production/marketing processes provide numerous market opportunities for small investments. Taiwanese entrepreneurs opt to start their business ventures primarily through the use of network financing, since bank loans fall under the dominion of government policies.
- Luttrell, Stephen P. 1997. Self-organization of Multiple Winner-take-all Neural Networks. *Connection Science* 9(1):11-30.** In this paper, analysis of the information content of discretely firing neurons in unsupervised neural networks is presented, where information is measured according to the network's ability to reconstruct its input from its output with minimum mean square Euclidean error. It is shown how this type of network can self-organize into multiple winner-take-all subnetworks, each of which tackles only a low-dimensional subspace of the input vector. This is a rudimentary example of a neural network that effectively subdivides a task into manageable subtasks.
- Maman, Daniel 1997. The Power Lies in the Structure: Economic Policy Forum Networks in Israel. *The British Journal of Sociology* 48(2):267-285.** Uses economic policy forum data from Reshemoth & other newspapers & magazines, 1974-1988, to explore the relationship between state organizations, big business corporations, nongovernmental interest groups, & institutional elites in the Israeli political-economic system. Policy forums are defined as institutional settings for encounters between state & nonstate organizations, through their elites; these encounters establish exchange relationships among the participants in economic policy-making processes. The network structure of ties in & among policy forums is discussed, with interlocking data serving as indicators of the ties among policy forum participants. Findings indicate that the

significance of policy forum networks rests not in their formal functions, but rather, in their structure & with the elite persons who sit on their boards.

**Markovsky, Barry 1997. Network Games. *Rationality and Society* 9(1):67-90.** Examines article by Bienenstock & Bonacich with one by Willer & Skvoretz. Willer & Skvoretz offer a method for conceptualizing the microprocesses of network exchange theory in game-theoretic terms, & conduct empirical tests of the resulting new formulation. Bienenstock & Bonacich make explicit attempts to supplant network exchange formulations with game theory, revealing what they consider to be fatal weaknesses in the former & remedies in the latter. A thread that wends through both works is the desirability of understanding thoroughly how a microlevel phenomenon - choice - & a macrolevel phenomenon - network - integrate to produce phenomena that do not exist outside the confluence of the two.

**Masheter, Carol 1997. Former Spouses Who Are Friends: Three Case Studies. *Journal of Social and Personal Relationships* 14(2):207-222.** Within the larger context of modified analytic induction, each of the three case-study couples in this article was selected to address questions that emerged during the research process about the nature and development of friendships between former spouses. The cases confirmed earlier descriptive findings on these friendships, the importance of perceived intentions, and de-escalation as a path to friendship after romantic involvement. The cases also yielded new findings. Modification and de-escalation emerged as additional paths to friendship. Partners of one couple disagreed whether they were friends, yet they were able to co-parent cooperatively. Also, focus of friendship varied; the partners of one couple focused on their children, whereas the partners of the other two couples focused on each other. These findings bridge the divorce and friendship literatures and have relevance for other types of friendships.

**Massev, Douglas S.; Espinosa, Kristin E. 1997. What's Driving Mexico-U.S. Migration? A Theoretical, Empirical, and Policy Analysis. *American Journal of Sociology***

**102(4):939-99.** Using data gathered in 25 Mexican communities, the authors link individual acts of migration to 41 theoretically defined individual-, household-, community-, and macroeconomic-level predictors. The indicators vary through time to yield a discrete-time event-history analysis. Over the past 25 years, probabilities of first, repeat, and return migration have been linked more to the forces identified by social capital theory and the new economics of migration than to the cost-benefit calculations assumed by the neoclassical model. The authors find that Mexico-U.S. migration stems from three mutually reinforcing processes: social capital formation, human capital formation, and market consolidation.

**McCarty, C.; Bernard, H. R.; Killworth, P. D.; Shelley, G. A. 1997. Eliciting representative samples of personal networks. *Social Networks* 19(4):303-323.** Introduced and evaluated a method for eliciting a representative sample of total personal networks. First names were used as a cue to elicit a sample of 14 alters from 712 adult respondents through a telephone interview. network characteristics for each respondent were calculated as averages and proportions across the 14 alters. These were compared to other studies using more specialized network generators. The method produced results which are logically consistent with those expected from a generator that elicits a sample from the total rather than a specialized subset of the total network. The proportions of kin relations, average tie strength, and frequency of contacts were lower than network generators designed to elicit networks of social support. Given the conclusion that the sample is representative of the total network, the authors examined the varying characteristics of respondents and their networks based on the domination of a particular relation type in their network. This analysis provides answers to such questions as "What characteristics of respondents account for the proportion of family relations in their network" and "What are the similarities between respondents whose networks are made up of mostly work-related relations?"

**McGrath, Cathleen; Blythe, Jim; Krackhardt, David 1997. The effect of spatial arrangement on judgments and**

- errors in interpreting graphs. *Social Networks* 19(3):223-242. The spatial arrangement of social network data in graphs can influence viewers' perceptions of structural characteristics such as prominence, bridging, and grouping. To study the extent of this effect, the authors conducted an experiment with 80 graduate students, in which each student viewed 3 of 5 different spatial arrangements of the same network. Results showed that viewers' perceptions depended on the structure of the network itself (i.e., the pattern of ties between nodes, and the spatial arrangement of nodes); Ss' perceptions of structural features of the network changed as the spatial arrangement of the network changed.
- Menon, Ajay; Jaworski, Bernard J.; Kohli, Ajay K. 1997. Product quality: Impact of interdepartmental interactions. *Journal of the Academy of Marketing Science* 25(3):187-200. The role of organizational factors affecting interdepartmental interactions and their subsequent effects on product quality are examined. Results from a national study suggest that product quality is affected by interdepartmental conflict and connectedness. Importantly, the linkage between interdepartmental conflict and product quality appears to be robust across varying levels of market turbulence and technological turbulence. In contrast, interdepartmental connectedness appears to be more important for product quality under conditions of high market and technological turbulence. The results also indicate that interdepartmental interactions are influenced by leadership characteristics (risk aversion of top managers), reward system orientation, and organization structure (centralization, departmentalization, and hierarchical levels). Managerial implications and directions for future work are proposed.
- Michael, Judd H.; Massey, Joseph G. 1997. Modeling the communication network in a sawmill. *Forest Products Journal* 47(9):25-30. Groups of employees communicate with each other in what can be considered networks. Understanding the structure of these communication networks is crucial to the success of wood products producers. The manner in which communication networks can be graphically modeled and quantified using techniques of social network analysis is illustrated. Data were collected from a mid-sized softwood sawmill to examine the network of communications among employees. Both production and management personnel were included in the sampling. Results indicate that certain persons are gatekeepers for information flows between and among functional areas, as well as gatekeepers for information between management and production. These gatekeepers must be recognized in order to diffuse information efficiently throughout the workplace.
- Mitchell, Ronald K.; Agle, Bradley R.; Wood, Donna J. 1997. Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Academy of Management Review* 22(4):853-886. Stakeholder theory has been a popular heuristic for describing the management environment for years, but it has not attained fully theoretical status. A paper aims to contribute to a theory of stakeholder identification and salience based on stakeholders possessing one or more 3 relationship attributes: power, legitimacy, and urgency. By combining these attributes, the paper generates a typology of stakeholder, propositions concerning their salience to managers of the firm, and research and management implications.
- Morrissey, Joseph P.; Johnsen, Matthew C.; Calloway, Michael O. 1997. Evaluating performance and change in mental health systems serving children and youth: An interorganizational network approach. *Journal of Mental Health Administration* 24(1):4-22. Planning for the delivery of community mental health services has evolved from models of services within individual agencies to community-wide systems of care, but development of methodologies for assessing system performance has lagged behind. A study presents one approach to system-level assessment by viewing children's mental health systems as an interorganizational network. Data are presented on two county-based child mental health systems in North Carolina that participated in the Robert Wood Johnson Foundation Mental Health Services Program for Youth. Findings indicate that the rural system was outperforming the urban system at the time of the first survey, but the urban system caught up over the

study interval. There was high agreement between the network and stakeholder ratings of system performance at both time periods. The method of data collection and analysis used in this study provides tools that can be used in a variety of settings to assess service system growth and development.

**Munch, Allison; McPherson, J. Miller; Smith-Lovin, Lynn 1997. Gender, children, and social contact: The effects of child-rearing for men and women. *American Sociological Review* 62(4):509-520.** Investigate the impact of childrearing on men's and women's social networks, using a probability sample of 1,050 adults from 10 towns. The life history calendar approach was used to generate retrospective events histories for commonly experience life events. Data support the hypothesis that social network size, contact volume, and composition vary with the age of the youngest child in a family. Childrearing reduced women's network size and contact volume, while it altered the composition of men's networks. Effects were most pronounced when the youngest child was around 3 yrs old. Results suggest the possibility that sex differences in structural location (in the sense of embeddedness in social networks) explain sex differences in outcomes over the lifecourse. The gender-specific effects of this life stage may accrue because childrearing places men and women in separate social worlds; childbearing and childrearing thus may be a crucial phase in the process by which gender differences are created and maintained.

**Myers, Gail P.; McGrady, Gene A.; Morrow, Clementine; Mueller, Charles W. 1997. Weapon carrying among black adolescents: a social network perspective. *The American Journal of Public Health* 87(6):1038-41.** Objectives. This report describes the salience of social networks to the phenomena of adolescent weapon carrying. Methods. A random-walk network sampling design was used to survey 113 adolescents about topics, including weapon carrying. Results. In a probability sample of 12- to 15-year-olds, 20.9% reported ever carrying a weapon. Carriers were eight times as likely as noncarriers to report weapon carrying by an older associate, and 19 times as likely to report weapon carrying by a peer. A

significant dose-response effect was present. Conclusions. This evidence supports the interpretation that modeling of weapon carrying by personal network members is important for its initiation and maintenance in adolescence.

**Neville, Brian; Parke, Ross D. 1997. Waiting for paternity: interpersonal and contextual implications of the timing of fatherhood. *Sex Roles: A Journal of Research* 37(1-2):45-61.** The aim of this study was to examine the effects of life-span contextual variation on father-child relationships. Sixty families in which both parents were either younger than 26 or older than 29 when they began childbearing and whose child was between the ages of 3 and 5 at the time of the study participated. Videotaped observations of father-child play were collected. Questionnaires were also administered to fathers, assessing their marital satisfaction, work-home compatibility, and social network attributes. Older fathers established stronger connections to extra-familial contexts and displayed greater reliance on verbal mechanisms to engage children during play. Younger fathers maintained a more traditional style of lathering and engaged their children through physical stimulation. The implications of these findings for models of father-child relationships were explored.

**Neyer, Franz J. 1997. Free recall or recognition in collecting egocentered networks: The role of survey techniques. *Journal of Social & Personal Relationships* 14(3):305-316.** The egocentered networks of 479 young adults (aged 18-32 yrs) were studied twice over a 1.5-yr period using 2 different techniques of collecting ego-centered network data. In the 1st study, a free recall technique was employed, whereas the 2nd study, used a recognition technique in generating ego-centered networks. It was shown that both techniques lead to different networks not only with respect to morphological features of social networks, but also and more importantly with respect to functional and relational features. The recognition technique seems to be useful in collecting exchange networks with high numbers of members and strong activity, while free recall produces networks which are smaller and less active in comparison, but nevertheless can be identified as networks of significant others.

**Ng, Sik Hung; Liu, James H.; Weatherall, Ann; Loong, Cynthia S. F. 1997. Younger Adults' Communication Experiences and Contact With Elders and Peers. *Human Communication Research* 24(1):82-108.** Intergenerational communication research has overemphasized dissatisfying experiences and treated elderly conversation partners as an undifferentiated category. To address these limitations, the authors surveyed 100 younger adults' (16-46 years) satisfying and dissatisfying experiences with both family and nonfamily elders, and accompanied these with own-age peers. Measures of social contact were also taken. As hypothesized, positivity of experiences and contact increased from nonfamily to family elders and to peers. Barriers of communication with nonfamily elders were due to contact more than experiences. For family elders and especially for peers, most measures of contact and experiences were positive. The authors also tested for effects due to respondents' gender and culture (New Zealanders of Chinese or European descent). Females had more positive experiences and contact on some of the measures. Views about elders held by Chinese were more favorable, yet this did **not translate** into improved experiences or contact.

**Nooteboom, Bart; Berger, Hans; Noorderhaven, Niels G. 1997. Effects of trust and governance on relational risk. *Academy of Management Journal* 40(2):308-338.** In transaction cost economics, trust has been treated as redundant or even misleading. A study tests the effects of governance and trust on the risk perceived by agents of firms in alliances. Two dimensions of relational risk are assessed: the probability that something will go wrong and size of the loss incurred when it does. Hypotheses, tested with survey data on the customer relations of 10 suppliers of electrical/electronic components, are well corroborated, with trust-related variables as well as others found to have significant effects.

**Osborn, Richard N.; Hagedoorn, John 1997. The institutionalization and evolutionary dynamics of interorganizational alliances and networks. *Academy of Management Journal* 40(2):261-278.** Once, alliances and networks were viewed from a singular perspective based on a researcher's host discipline.

Now scholars are reaching beyond these boundaries to develop a more multifaceted view. They are beginning to recognize that alliances as networks are evolutionary, multifaceted institutions for cooperation. Researchers are encouraged to abandon a singular, clear-cut description of alliances and networks based on the assumptions of a host discipline in favor of a more robust, sophisticated, multidimensional vision.

**Peng, Mike W. 1997. Firm growth in transitional economies: Three longitudinal cases from China, 1989-96. *Organization Studies* 18(3):385-413.** A study investigates how firms in transitional economies such as the post-Soviet republics, Eastern Europe and China achieve growth. Using 3 longitudinal cases conducted over a 7-year-period (1989-1996) from China, the study identifies a network-based strategy of growth, which features boundary blurring through developing inter-organizational relationships with other firms. The firms' inability to achieve growth through generic expansion or acquisitions, 2 of the traditional growth strategies, is discussed. The institutional, economic and cultural rationales that give rise to the strategic choice of a network-based strategy are explored.

**Pieterse, Jan Nederveen 1997. Equity and Growth Revisited: A Supply-Side Approach to Social Development. *European Journal of Development Research* 9(1):128-49.** Does combining several arguments on the relationship between equity and growth yield new insight? Redistribution with growth, prominent in the 1970s, is currently being revisited. East Asian experiences can also be considered with a view to equity. Human development makes a strong case for combining equity and growth along the lines of human capital, but leaves the social dimension unexplored. Studies of welfare states add finesse to equity-growth arguments. Sociology of economics addresses questions of embeddedness, social capital, networks and trust, which are rarely considered in this context. By adding novel elements, this exercise seeks to arrive at a new overall perspective on social development.

**Renner, Ilona 1997. Social Coherence and Innovativeness. Structural Effects on the**

**Acceptance of New Themes in Social Science Research Fields. Soziale Kohärenz und Innovativität. Struktureffekte zur Akzeptanz neuer Themen in sozialwissenschaftlichen Forschungsfeldern. *Kolner Zeitschrift für Soziologie und Sozialpsychologie* 49(1):74-97.** Generates & empirically illustrates hypotheses on how network ties between actors affect thematic innovation in scientific communities. Drawing on a network model of the diffusion of innovations, it is argued that new ideas are more easily accepted (& thematic conformity less likely) in coherent networks if integrated actors are particularly creative, while fragmented contexts are more innovative if new ideas are more likely to be adopted by marginal actors. A network & thematic analysis of 1990-1993 bibliographic data from the fields of violence research, family sociology, & political sociology demonstrates how various conditions of scientific knowledge production support these effects & shape the impact of scientists' social integration on their thematic creativity & their fields' innovativeness.

**Ridge, Damien; Minichiello, Victor; Plummer, David 1997. Queer connections: community, 'the scene', and an epidemic. *Journal of Contemporary Ethnography* 26(2):146-182.** This article examines assumptions behind "gay community," contrasting them with the experiences of homosexually active men on the commercial gay scene. In-depth interviews with mainly young men in Melbourne, Australia revealed that while the informants considered "the scene" to be a central part of the gay community, they were critical of the scene with respect to attributes of "community." Anticipated components of community including unity, support, friendliness, and acceptance were not features of the informants' accounts. Conversely, the data revealed fragmented social networks involving various social groups, categories of people, and an "in/out" culture. The article also identifies a range of social dynamics associated with the scene, including commercial pressures, sexualization, and gender negotiations. network characteristics and dynamics tend to work against the establishment of close and supportive friendships. Social influences on the adoption of "safe sex" are also discussed.

**Rowley, Timothy J 1997. Moving beyond dyadic ties: A network theory of stakeholder influences. *Academy of Management Review* 22(4):887-910.** Stakeholder theory development has increased in recent years, in part because of its emphasis on explaining and predicting how an organization functions with respect to the relationships and influences existing in its environment. Thus far, most researchers have concentrated on dyadic relationships between individual stakeholders and a focal organization. Using social network analysis, a theory of stakeholder influences is constructed, which accommodates multiple, interdependent stakeholder demands and predicts how organizations respond to the simultaneous influence of multiple stakeholders.

**Rynrbandt, Linda J. 1997. The "ladies of the club" and Caroline Bartlett Crane: affiliation and alienation in progressive social reform. *Gender & Society* 11(2):200-15.** This article focuses on social reformer Caroline Bartlett Crane (1858-1935) and her association with club women for municipal reform during the Progressive Era. Using archival material, the author examines the actual process of Progressive social reform in which Crane used social networks, sociology, and Social Gospel ideals to achieve positive social change. The author also addresses recent critiques of Progressive women reformers regarding their motivations, accomplishments, and their ultimate legacy in Progressive Era social change.

**Saxton, Todd 1997. The effects of partner and relationship characteristics on alliance outcomes. *Academy of Management Journal* 40(2):443-461.** Theories of alliance behavior and outcomes have tended to emphasize either partner or relationship characteristics. A study integrates the 2 perspectives and examines their separate and combined effects on alliance outcomes. The research involved analysis of 98 alliances through a 2-stage survey design. Findings support a positive relationship between partner firms' benefits from alliance participation and partner reputation, shared decision making, and strategic similarities between partners.

**Schenk, Michael; Dahm, Hermann; Sonje,**



- Deziderio 1997. **The Importance of Social Networks in the Diffusion of New Communication Technology. Die Bedeutung sozialer Netzwerke bei der Diffusion neuer Kommunikationstechniken.** *Kolner Zeitschrift für Soziologie und Sozialpsychologie* 49(1):35-52. Draws on ego-centered network theory, the theory of planned behavior, & 1994 questionnaire data from 367 computer network users & nonusers in the Federal Republic of Germany to examine how social networks determine the diffusion of modern communication technology. Analysis indicates that early adopters of on-line technology for both private & professional use belong to networks of innovators that overlap but do not coincide with personal core networks. These relations are often homogeneous; relations in innovation networks, but outside of personal core networks, are described as weak ties. Innovation networks, whose members are mostly well-educated males linked more by financial & technological than friendship & lifestyle concerns, are concluded to form a proinnovative social pressure that urges others to adopt new technology.
- Schwendinger, Herman; Schwendinger, Julia R. 1997. **Charting subcultures at a frontier of knowledge.** *The British Journal of Sociology* 48(1):71-95. A study was conducted using graphs which show the networks of relationships between different subcultural groups of teenagers as a means of understanding the dynamics between the groups. The groups examined are given labels such as socialites, streetcorner youth and intellectuals. Other intermediary groups interact between these groups. It is also possible to analyze gender relations. This form of analysis allows researchers to link their observations of groups with the models to gain a better understanding of group dynamics.
- Sedaitis, Judith B. 1997. **Networks in market transitions: Managerial constraints in post-Soviet commodity markets.** *International Studies of Management & Organization* 27(1):61-83. Managing the transition to a market economy has been circumscribed by the type of organizations in which Russian managers operated. Spin-offs functioned as a corollary to the policy of massive privatization, which was advocated as the leading measure for organizational development by the World Bank and other international financial institutions. Using network data gathered in over 60 interviews with managers of post-Soviet commodity markets, a paper compares the management of spin-offs versus start-up firms during the first 4 years of market transition. The study redresses a gap in the managerial and venturing literatures by focusing on the founding managers of commodity markets as a network or group.
- Stamps, David. **Off the charts.** *Training* 34(10):77. New tools for mapping the shadow networks that lie behind the organizational charts are suggesting new possibilities - and fueling consultants' dreams. This type of data-grounded mapping of informal human networks within organizations is refreshing in its simplicity and straightforward approach. The people within an organization are simply polled as to who they turn to when making a decision. The responses are plugged into a software-mapping program which yields a graphic representation of the decision-making loop.
- Stanton-Salazar, Ricardo D. 1997. **A social capital framework for understanding the socialization of racial minority children and youths.** *Harvard Educational Review* 67(1):1-41. A network-analytic model for understanding the socialization of working-class racial minority youth is built around the concepts of social capital and institutional support. Social capital embodies social relationships with institutional agents, such as teachers and counselors who are capable of providing institutional support. Successful socialization among minority children entails learning to decode the system and to participate in power. Developing a bicultural network orientation among minority children is one way to negotiate the triple quandary inherent in minority socialization.
- Stone, Glenn Davis 1997. **"Predatory sedentism": intimidation and intensification in the Nigerian savanna.** *Human Ecology: An Interdisciplinary Journal* 25(2):223-43. While many studies have explored how agriculture changes when population density rises, this paper examines actions farmers may take to

control whether population density rises. Using information from ethnographic fieldwork, colonial archives, and air photography, two agricultural groups migrating into an agricultural frontier in the Nigerian savanna are compared. Population density in Kofyar communities has risen to over 100/(km.sup.2); Tiv communities, although older, have maintained population densities of around 50/(km.sup.2), in part through intimidation of encroachers. This use of intimidation is a component of a distinctive adaptive strategy that includes settlement stability, high population mobility tied to witchcraft accusations, relatively extensive cultivation allowing considerable off-time, and reliance on social networks to facilitate residential mobility and land access. Population pressure must be seen as an integral part of this adaptive strategy, rather than as cause or consequence.

**Suzuki, Shinobu 1997. Cultural Transmission in International Organizations. Impact of Interpersonal Communication Patterns in Intergroup Contexts. *Human Communication Research* 24(1):147-180.** This study examines how organizational cultures are transmitted and maintained through interactions among organizational members across intergroup boundaries. The major hypothesis of interest was that the total number of individuals out-group communication network links predicts the degree of individual-out-group transmission of work-related values and beliefs. The research design involved a survey of workers in international organizations with bicultural workforces (U.S. and Japanese). A total of 118 responses were submitted to a series of multiple regression analyses. The results provide evidence to support the relationship between communication and cultural transmission. Theoretically, it addressed two issues that have not been dealt with in social influence theories. First, it identified different types of social influence: agreement, accuracy, and congruency derived from the coorientation model. Second, it identified specific conditions under which social influence takes place by examining relational proximity in three different types of networks.

**Swedberg, Richard 1997. New economic sociology: what has been accomplished,**

**what is ahead? *Acta Sociologica* 40(2):161-83.** New Economic Sociology can be said to have begun in 1985 and is based on the notions of 'embeddedness' and the ways that economies are socially constructed. The idea of cultural embeddedness has been introduced to supplement the initial approach which tended to ignore culture. Embeddedness has become a popular term, partly because it is very flexible. This approach to economic sociology is still relatively young and there are areas that require further investigation such as the law and how it is linked to the economy.

**Treadwell, Thomas W.; Kumar, V. K.; Stein, Steven A.; Prosnick, Kevin 1997. Sociometry: Tools for Research and Practice. *Journal for Specialists in Group Work* 22(1):52-65.** Basic sociometry tools & methodologies & their analysis are described. Several dimensions of sociometric inquiry are discussed: (1) nomination without ranking, (2) nomination with ranking, (3) peer rating procedure, (4) conceptualization & measurement of the social atom, (5) psychodynamic sociometry, (6) question construction, (7) instrument administration, (8) data analysis, (9) interactional patterns analysis, & (10) computerized data processing.

**Trinke, Shanna J.; Bartholomew, Kim 1997. Hierarchies Of Attachment Relationships In Young Adulthood. *Journal of Social and Personal Relationships* 14(5):603-625.** This study examined the characteristics of attachment hierarchies in young adulthood. Multiple components were used to assess attachment bonds: using the attachment figure as a *safe haven* in times of distress, using him or her as a *secure base* from which to venture out independently, having a strong *emotional tie* with the person regardless of whether the tie is positive, negative, or mixed, seeking to be in close *proximity* to the person, and *mourning the loss* of the person. The Attachment Network Questionnaire (ANQ) was developed to measure multiple adult attachment relationships and to examine the characteristics of attachment hierarchies. 223 university students completed the ANQ by listing their significant relationships and then ranking these persons in terms of the various components of attachment. A subset of the participants was followed up to

examine the one-month test-retest reliability of the ANQ. Young adult participants were found, on average, to have 5.38 attachment figures, including family members, romantic partners, and friends. The figures identified included both secure and insecure attachments. In addition, the ANQ demonstrated adequate test-retest reliability over one month.

**Tsui, Anne S; Farh, Jiling-Lih Larry 1997. Where guanxi matters: Relational demography and guanxi in the Chinese context. *Work & Occupations* 24(1):56-79.** A paper explores the indigenous concept of guanxi and its application in the Chinese context. Guanxi is defined as the existence of direct particularistic ties between 2 or more individuals. This concept is related to the idea of relational demography, which has been used by US scholars in recent years to explain and predict a variety of individual-, group-, and organizational-level outcomes in US employment settings. By comparing and contrasting the idea of guanxi to relational demography, an integrative framework is developed that may provide a more comprehensive understanding of the dynamics underlying demographic and background similarities between people in the Chinese context than by using either concept alone. Several illustrative hypotheses are offered on how and when relational demography and guanxi will matter most in influencing work outcomes in Chinese organizations.

**Uzzi, Brian 1997. Social structure and competition in interfirm networks: the paradox of embeddedness. *Administrative Science Quarterly* 42(1):35-68.** Twenty-three entrepreneurial firms were analyzed to determine the components of embeddedness that affect the organizational and economic outcomes. Results suggest that embeddedness is a logic which provides positive effects on integrative agreements, complex adaptation, economies of time, and Pareto improvements in allocative efficiency. A framework that clarifies variations of such properties is also presented.

**Valente, T. W.; Watkins, S. C.; Jato, M. N.; van der Straten, A.; Tsitsol, L. P. 1997. Social network associations with contraceptive use among Cameroonian women in voluntary associations. *Social Science and***

***Medicine* 45(5):677-87.** This paper examines the association between social networks and contraceptive use. Using data from a survey of women belonging to voluntary associations in Yaounde, Cameroon, we find that the behavior and characteristics of the members of a respondent's personal networks are associated with her contraceptive use, over and above a set of her own individual characteristics that are usually found to be important. Respondents who report that their network partners approve of contraception, use it, and encourage the respondent to use are more likely to use contraception themselves; the association with encouragement is particularly strong. Moreover, there is a strong association between the specific methods of contraception used by a respondent and those used by her network partners, suggesting that members of personal networks exchange and evaluate specific methods. Because most of the respondent's network partners were interviewed, we are able to compare the respondent's perceptions of contraceptive use by her network partners with the network partner's actual use. We find that it is perceptions of use that matter, even if those perception are incorrect.

**Van Dijk, Frans; van Winden, Frans 1997. Dynamics of Social Ties and Local Public Good Provision. *Journal of Public Economics* 64(3):323-41** A model is presented in which social ties between individuals and private contributions to a local public good are interrelated. Ties are formalized by means of utility interdependence, and depend on the history of social interaction, in this case the joint provision of the public good. The resulting dynamic model generates equilibrium values of the intensity of ties and the private provision level. The impact of public provision on these variables is analyzed. The authors' results are very different from those obtained with the standard model, where individuals are only interested in the utility from own consumption.

**van Groenou, Marjolein Broese; van Tilburg, Theo 1996. Network Analysis. *Encyclopedia of gerontology Vol 2.*** The personal networks of older people reflect their social opportunities and personal choices to maintain a specific set of relationships with relatives, neighbors, friends, acquaintances, and

so on. NETWORK ANALYSIS is the method used to identify and examine the structural and functional features of the network of the older adult. The conceptualization and operationalization of the personal network depend on the subject of research. Five approaches to define personal network membership are presented and discussed. The five approaches differ regarding the part of the personal network that is mapped, and result in networks of different sizes and compositions. Regardless of the type of network delineation, a distinction can be drawn between the star network (data available on relationships with the focal person) and the full network (data available on all the network relationships). Features of the structure and content of both types of personal networks are presented. Finally, network analysis methods are presented and discussed, including ways to analyze hierarchical databases.

**Virnoche, Mary E.; Marx, Gary T. 1997. "Only Connect"-E. M. Forster in an Age of Electronic Communication: Computer-Mediated Association and Community Networks. *Sociological Inquiry* 67(1):85-100.** Constructs a framework for distinguishing various types of computer-mediated communities in order to analyze "community networks," ie, systems that electronically connect individuals who also share common geographic space. The analysis draws on field research conducted 1994/95 via participation in & observation of the Boulder Community Network (an electronic discussion group & web site for the sociology department of the U of Colorado) & Local Net (an online discussion of worldwide community network advocates & organizers), supplemented by related primary & secondary sources. Problems concerning community networks as a locus of computer-mediated interaction are identified, & research directions that may enhance future sociological inquiries into the social understanding of community networks as well as other mediated associations are proposed.

**Wallace, R.; Wallace, D. 1997. Socioeconomic determinants of health: community marginalisation and the diffusion of disease and disorder in the United States. *British Medical Journal (BMJ)* 314(7090):1341-5.**

This article describes the cascading diffusion of "inner city problems" of disease and disorder in the United States--from the huge marginalised inner city communities of the largest municipalities, first along national travel routes to smaller cities, and then from central cities into surrounding more affluent suburbs--following the pattern of the daily journey to work. Public policies and economic practices which increase marginalisation act to damage the "weak ties" of the community social networks which bind central city neighbourhoods into functioning units. Spreading disease and disorder can be interpreted as indices of the resulting social disintegration, which is driven by policy. This "failure of containment" in the United States should serve as a warning for cities in Europe against reducing the municipal and other services that they provide to "unpopular" subpopulations.

**Wenz-Gross, Melodie; Siperstein, Gary N. 1997. Importance of social support in the adjustment of children with learning problems. *Exceptional Children* 63(2):183-94.** This study examined the social networks, social supports, friendships, and adjustment of 106 4th-, 5th- and 6th-grade children. Forty children were receiving special education services for learning problems 66 were in general education. Results showed that children with and without learning problems did not differ on the size or composition of their social networks nor on the negative features of their friendships (conflict, competition). However, children with learning problems used their network differently for support. They turned to the family less for problem-solving support and to peers less for all types of support than children without learning problems. Results are discussed in terms of the implications for children with learning problems as they enter adolescence.

**Westphal, James D.; Gulati, Ranjay; Shortell, Stephen M. 1997. Customization or conformity? An institutional and network perspective on the content and consequences of TQM adoption. *Administrative Science Quarterly* 42(2):366-394.** A study develops a theoretical framework that integrates institutional and network perspectives on the form and consequences of administrative innovations. Hypotheses are tested using survey and

archival data on the implementation of total quality management (TQM) programs and the consequences for organizational efficiency and legitimacy in a sample of over 2,700 US hospitals. The results show that early adopters customize TQM practice for efficiency gains, while later adopters gain legitimacy from adopting the normative form of TQM programs. The findings suggest that institutional factors moderate the role of network membership in affecting the form of administrative innovations adopted and provide strong evidence for the importance of institutional factors in determining how innovations are defined and implemented.

**Wilson, John; Musick, Marc 1997.** Who Cares? Toward An Integrated Theory Of Volunteer Work. *American Sociological Review* 62:694-713. We construct an integrated theory of formal and informal volunteer work based on the premises that volunteer work is (1) productive work that requires human capital, (2) collective behavior that requires social capital, and (3) ethically guided work that requires cultural capital. Using education, income, and functional health to measure human capital, number of children in the household and informal social interaction to measure social capital, and religiosity to measure cultural capital, we estimate a model in which formal volunteering and informal helping are reciprocally related but connected in different ways to different forms of capital. Using two-wave data from the Americans' Changing Lives panel study, we find that formal volunteering is positively related to human capital, number of children in the household, informal social interaction, and religiosity. Informal helping, such as helping a neighbor, is primarily determined by gender, age, and health. Estimation of reciprocal effects reveals that formal volunteering has a positive effect on helping, but helping does not affect formal volunteering.

**Wolf, Joachim 1997.** From "starworks" to networks and heterarchies? Theoretical rationale and empirical evidence of HRM organization in large multinational corporations. *Management International Review* 37:145-169. Applying information-processing theory, a paper discusses the appropriateness of the network concept and the heterarchical

concept as models of IHRM organization. Data gathered in 82 foreign subsidiaries of US and European multinational corporations (MNC) are used to analyze to what degree their HRM units have adopted the network and heterarchical concept. Based on a complex, 18-dimensional measure of human resource management (HRM) efficiency and effectiveness the superiority of network HRM designs is tested. Given the increasing dynamism, heterogeneity, and ambiguity of MNCs' internal and external environment, the network concept and the heterarchical concept seem to be fruitful avenues of IHRM organization.

**Zafirovski, Milan; Levine, Barry B. 1997.** Economic sociology reformulated: The interface between economics and sociology. *American Journal of Economics & Sociology* 56(3):265-285. Previous theoretical and empirical research on economic sociology leaves much to be desired in terms of consistently defining the agenda and objectives of the discipline. As a result, economic sociology often appears to lack a clearly defined mission and purpose. This is epitomized by various failures to establish adequate epistemological relations of the proper realm of economic sociology with those of economics and sociology, and especially with the domain of rational choice theory. This failure is compounded by a misplaced distinction between the subject matter of economic sociology and that of sociological economics, or socioeconomics. Some recent works in the discipline have not helped to remedy this situation. An attempt is made to address this situation by suggesting some reformulations of the subject matter of economic sociology in relation to those of related disciplines. In addition, an attempt is made to redefine the field of the sociology of the market which is seen as the focal specialty of economic sociology.

**Zaleznik, Abraham 1997.** Real Work. *HARVARD BUSINESS REVIEW Nov/Dec:42*. In this HBR Classic, originally published in January-February 1989, Abraham Zaleznik observes that many senior executives are substituting the rituals of "psychopolitics"-the balancing of social expectations in the workplace-for the real work of thinking about and acting on ideas relating to products, mar-

kets, and customers. That preoccupation with organizational issues can be traced back to the 1930s, when certain influential thinkers decided that maintaining workplace harmony was managers' most important task. The result was a new generation of managers who were more interested in cultivating the status quo than in changing their companies to thrive in a competitive world. Later studies showed that workers preferred managers who knew their own minds and understood the substance of their managerial work. Real proficiency in such work breeds self-confidence in managers, these studies showed, which in turn enhances workers' confidence and morale. In his retrospective commentary, Zaleznik writes that senior executives seem to have established a healthier balance in the 1990s between their real work and psychopolitics. Executives are now leading their companies to deal with external, competitive conditions that require them to cut costs, create products, please customers, and develop markets. What worries Zaleznik today, however, is that under the guise of employee empowerment, senior executives are beginning again to indulge in ritualized actions. For instance, they establish task forces to seek answers to questions they themselves should be addressing. The real work of the executive, says Zaleznik, should always include the thinking that informs and directs action.

## Books

- Anderla, Georges; Dunning, Anthony; Forge, Simon. 1997. *Chaotics: An Agenda for Business and Society in the 21st Century*. Westport, CT: Greenwood Publishing Group.** The new discipline of chaotics will alter our thinking about the real forces of change in our society. As presented here, chaotics emphasizes that the real world cannot be understood in terms of conventional deterministic philosophies or standard chaos theory, but that complexity in itself has a powerful but subtle role to play. How does this apply to business and society? To what degree are our lives governed by misguided notions - or do our businesses succeed by chance - because real societal and business forces and their effects are not really understood? Beginning with the foundations of the discipline, this book applies chaotics to business and wealth creation and to society. On the social side, it examines a sea-change in the philosophy of everyday living, be it the concept of employment or our relationship to the environment. The book examines personal identity and its loss in modern society, as well as the search for new contacts and gratification through technology. The authors look at the stunted growth of philosophy against science but emphasize what philosophy has to tell us in a chaotic world. A major new text which will be of interest to professionals and scholars in business, government, and society.
- 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.
- Cahill, Andrew Michael and Kavanaugh, Andre L. 1997. *Community Networks: Lesson from Blackburg, Virginia*. Boston: Artech House Publishers.** Community networking is about access to knowledge. Networking does not require the construction of edifices (although we may see a cellular or personal communication services (PCS) tower from time to time on the skyline), it does not involve manufacturing and the attendant problems of pollution, and it certainly does not need high population densities and the accompanying transportation gridlock. As Nicholas Negroponte so cogently observes in *Being Digital*, networking is about bits, not atoms. It is about information and the coding schemes used to represent the information, not the artifact in which information has historically come packaged. It is about moving information, not about moving people. It is about removing the constraints of time and place and lowering the threshold for society to access information and each other.
- Bloor, Michael. 1995. *A Sociology Of HIV Transmission*. Sage Publications.** In this authoritative study, Michael Bloor provides a lucid overview of the vital contribution sociology has made 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. He goes on to look at
- Castells, Manuel. 1997. *The Rise of the Network Society*. Oxford: Blackwell Publishers.** This book is an account of the economic and social dynamics of information. Based on research in the USA, Asia, Latin America, and Europe, it aims to formulate a systematic theory of the information society which the fundamental effects of information technology on the contemporary world. The global economy is now characterized by the almost instantaneous flow and exchange of information, capital and cultural communication. These flows order and condition both consumption and production.

The networks themselves reflect and create distinctive cultures. Both they and the traffic they carry are largely outside national regulation. Our dependence on the new modes of informational flow gives enormous power to those in a position to control them to control us. The main political arena is now the media, and the media are not politically answerable. Manuel Castells describes the accelerating pace of innovation and application. He examines the processes of globalization that have marginalized and now threatens to make redundant whole countries and peoples excluded from information networks. He investigates the culture, institutions and organizations of the network enterprise and the concomitant transformation of work and employment. He shows that in the advanced economies production is now concentrated on an educated section of the population aged between 25 and 40: many economies can do without a third or more of their people. He suggests that the effect of this accelerating trend may not be mass unemployment but the extreme flexibilization of work and individualization of labor, and, in consequence, a highly segmented social structure. The author concludes by examining the effects and implications of change on media culture ("the culture of real virtuality"), on urban life, global politics, and the nature of time. Written by one of the world's leading social thinkers and researchers, *The Rise of the Network Society* is the first of three linked investigations of contemporary global, economic, political and social change. It is a work of outstanding penetration, originality, and importance.

**Eve, Raymond A.; Sara Horsfall; Mary E. Lee, Mary E. 1997. *Chaos, Complexity, and Sociology: Myths, Models, and Theories*. Publisher not known. Foreword by Frederick Turner.** Chaos theory has firmly established itself in many of the physical sciences, such as geology and fluid dynamics. This edited volume helps locate this revolutionary theory in sociology as well as the other social sciences. Doors previously closed to social scientists may be opened by this dynamic theory, which attempts to capture movement and change in exciting new ways. Editors Raymond A. Eve, Sara Horsfall, and Mary E. Lee, with guidance from Editorial Advisor Frederick Turner, provide a timely and well-chosen collection of articles, which first examines the emerging myths and theories surround-

ing the study of chaos and complexity. In the volume's second part, methodological matters are considered. Finally, conceptual models and applications are presented. "Postmodern science" has provided and refined conceptual tools that have special value for the social sciences. This perceptive and thorough volume will be useful to sociologists and other social scientists interested in chaos and complexity theory.

**Forrester, R. V. E. and Grant, Gordon. 1997. *Resettlement from Large Psychiatric Hospital to Small Community Residence: One Step to Freedom?* England: Ashgate Publishing.** After many years in hospital, how do people with long-term mental illness adjust to a new life in different community settings? Social network analysis and case studies are used to map the structure of people's social relationships, the results indicating that interview based approaches, widely used in this field, give only a partial representation of important social contacts in people's lives. Relationships between properties of people's social networks and measures of social integration are tested. How these relationships are mediated by care practices in different community housing schemes is examined. The findings are reviewed in the light of national policy expectations for community care and in relation to the wider theoretical and practice literature.

**Harrison, Bennett. 1997. *Lean and Mean: Why Large Corporations Will Continue to Dominate the Global Economy*. New York, NY: Guilford Press.** In this highly acclaimed, myth-shattering book, leading political economist Bennett Harrison argues that, contrary to prevailing wisdom, big firms, the urge to merge, and strategic alliances that link the largest and smallest companies are alive and well. He makes the case that although smaller companies have an important role to play, long-term economic growth and technological innovation lie ultimately where they always have: with the country's largest, most resourceful global companies. Harrison goes on to argue that, rather than continuing to celebrate the romance of small firm-led economic growth and development, there are more significant issues to be dealt with by government, business, and labor policymakers at the turn of the millennium. Addressing a range of critical issues, *Lean and Mean* helps us truly under-



stand, and learn to live with, the brave new world of business organization as it is *really* evolving, in the U.S. and across the globe.

**Hawryszklewycz, Igor. 1997. *Designing the Networked Enterprise*. Norwood, MA: Artech House Publications.** This new book shows you how utilizing the latest advances in information technology can improve the quality of communication for your company or organization, both internally and externally. In definitive detail, it describes how to create effective networks using the newest groupware technologies: the Internet, workflow systems, document management systems, and more. The book also presents a new design method that enables you to choose the groupware technology best suited to the social and managerial needs of your organization. If you're a business systems analyst, communications manager, or IS manager responsible for developing communications or workgroup technologies for your company, you'll welcome this comprehensive guide that helps you: Provide better, more effective support to workgroups; Redesign work processes, using IT to improve cooperation in distributed groups; Develop platforms that provide communication services to distributed groups. Supported by nearly 200 illustrations and helpful real-life case studies, this book is also a valuable information source for Intranet designers and an excellent text in graduate and undergraduate computing, information science, and business courses.

**Mackay, Harvey. 1997. *Dig Your Well Before You're Thirsty: The Only Networking Book You'll Ever Need*. Bantam.** Mackay (Swim with the Sharks Without Being Eaten Alive) devotes much of this work to delivering essentially one message: it's not what you know, but who you know. In his breezy style, he covers aspects of why networking is important to one's career, and how to build a network. Mackay includes the 10 commandments of networking such as "I will never say no to the other guy" and "I won't stall I'll answer the call," as well as a top-10 list of networking mistakes like not assuming that credentials are power or confusing visibility with credibility. Also featured are networking stories by such personalities as Muhammad Ali, ex-football coach Lou Holtz and Neiman-Marcus founder

Stanley Marcus. Each of Mackay's 83 chapters ends with a "Mackay's Maxim" such as the one that explains the book's title "People aren't strangers if you've already met them. The trick is to meet them before you need their help." As Jack Kemp notes in his introduction, "This is the book that shows you how to achieve a permanent network in a Post-it-note world." (May)

**Masterpasqua, Frank and Perna, Phyllis A. 1997. *The Psychological Meaning of Chaos: Translating Theory into Practice*. Washington: American Psychological Association.** Theories of chaos, complexity, and self-organization represent one of the greatest challenges to scientific thinking of this century. They also have greater potential for psychology, offering a model for behavior that resonates more closely with psychologists' understanding of human change. In this new model, disorder and instability are not construed as error or pathology in an otherwise stable, clockwise universe. Instead, unpredictability and instability are accepted as intrinsic to complex systems and essential in any transformation process - one that allows for self-organization. Instability is seen as an essential part of the creation process, without which new order is impossible. The book first begins with a general and easy-to-understand description of chaos and complexity theories. Following this, three parts focus on topics long debated within psychology development; regression, dissociative disorders, and childhood trauma, and group and family dynamics.

**Molm, Linda D. 1997. *Coercive Power In Social Exchange*. New York, NY: Cambridge University Press.** Exchange theorists have traditionally excluded punishment and coercion from their analyses; but Molm examines whether exchange theory can be explained to include reward and coercive power. She develops and tests a theory that emphasizes the interdependence of reward and coercive power, finding that they are fundamentally different, not only in their effects on behavior, but also in the incentive and the risks of power use.

**Palriwala, Rajni and Risseuw, Carla. 1996. *Shifting Circles Of Support Contextualising Kinship and Gender in South Asia and Sub-***

- Saharan Africa. Walnut Creek, CA: Altamira Press.** Studying gender, kinship, economics, and politics as separate entities has led to a static view of culture, community, and family. *Shifting Circles of Support* breaks this practice by integrating the disciplines in order to better understand the dimensions of changing kinship and gender relations. Each chapter provides a case study, which highlights different aspects of this theme - how people view gender relations, create them, live **with them**, and in the process, become influenced by and deal with the wider economic, and political environment.
- Roschelle, Anne R. 1997. *No More Kin: Exploring Race, Class, and Gender in Family Networks*. London: Sage Publications.** Using an integrative framework, this book examines extended kinship networks among African American, Chicano, Puerto Rican, and non-Hispanic White families in contemporary America. I have selected these four racial-ethnic groups for several reasons. First and foremost, my expertise in the area of racial and ethnic minorities is on African American, Chicano, and Puerto Rican. In addition, although the National Survey of families and Households (NSFH), from which I draw my data, includes Native Americans and Cubans, in both cases they comprise less than 1% of the sample, making comparisons problematic. Furthermore, the categories "other Hispanic" and "Asian American" consolidate distinct Latino and Asian American ethnic groups, homogenizing their unique sociohistorical experiences. Finally, the inclusion of non-Hispanic Whites in the sample is necessary because the literature on minority families claims that they are less likely to participate in extended kinship networks than are Latinos and Blacks.
- Roy, William G. 1997. *Socializing Capital: The Rise of the Large Industrial Corporation in America*. Princeton, NJ: Princeton University Press.** Ever since Adolph Berle and Gardiner Means wrote their classic 1932 analysis of the American corporation, *The Modern Corporation and Private Property*, social scientists have been intrigued and challenged by the evolution of this crucial part of American social and economic life. Here William Roy conducts a historical inquiry into the rise of the large publicly traded American Corporation. "The first thoroughly sociological inquiry into the rise of corporate capitalism I know of, and the most trenchant critique of the prevailing 'efficiency theorists' we are likely to have for some time." - Charles Perrow, Yale University
- Shah, A. M.; Baviskar, B. S.; Ramaswamy, E. A. 1996. *Social Structure And Change: Volume 3: Complex Organizations And Urban Communities*. Publisher not known. Introduction by N. R. Sheth.** This book is the third in a series of five and comprises contributions concerning the social aspects of urbanization and industrialization, and the management of complex organizations in a transforming society. The distinguished contributors explore a range of issues including the impact of society on industry, the impact of technology on caste and status, the worldviews of administrators and industrialists, and the management of such organizations as universities. One theme of the text concerns the recent surge in economic liberalization and the resultant individualism, which gives rise to inconsistencies, dissension, and conflict. Additionally, the text explores how traditional values and cultures adapt to and in turn mold urban structures and processes. With that in mind, a major concern of the contributors focuses on the role played by traditional Indian institutions, especially caste, in the social behavior and attitudes of participants in today's complex organizations and communities.
- Stein, Paul S. G.; Grillner, Sten; Selverston, Allen I.; Stuart, Douglas G. 1997. *Neurons, Networks, and Motor Behavior*. Cambridge, MA: MIT Press.** Recent advances in motor behavior research rely on detailed knowledge of the characteristics of the neurons and networks that generate motor behavior. At the cellular level, *Neurons, Networks, and Motor Behavior* describes the computational characteristics of individual neurons and how these characteristics are modified by neuromodulators. At the network and behavioral levels, the volume discusses how network structure is dynamically modulated to produce adaptive behavior. Comparisons of model systems throughout the animal kingdom pro-

vide insights into general principles of motor control. Contributors describe how networks generate such motor behaviors as walking, swimming, flying, scratching, reaching, breathing, feeding, and chewing. An emerging principle of organization is that nervous systems are remarkably efficient in constructing neural networks that control multiple tasks and dynamically adapt to change. The volume contains six sections: selection and initiation of motor patterns; generation and formation of motor patterns: cellular and systems properties; generation and formation of motor patterns: computational approaches; modulation and reconfiguration; short-term modulation of pattern-generating circuits; and sensory modification of motor output to control whole body orientation. Paul S. G. Stein is Professor in the Department of Biology at Washington University in St. Louis. Sten Grillner is Professor and Chairman of the Department of Neuroscience at the Karolinska Institute, Stockholm, and Chairman of the Nobel Committee for Physiology/Medicine. Allen I. Selverston is Professor in the Department of Biology at the University of California, San Diego, and an Associate Editor of the *Journal of Neurophysiology*. Douglas G. Stuart is Professor in the Department of Physiology and Regents' Professor at the University of Arizona in Tucson.

**Wellman, Barry. 1997. *Networks in the Glo-***

***bal Village: Life in Contemporary Communities*. Boulder, Co. Westview Press.** *Networks in the Global Village* examines how people live through personal communities: their networks of friends, neighbors, relatives, and coworkers. It is the first book to compare the communities of people around the world. Major social differences between and within the First, Second, and Third Worlds affect the opportunities and insecurities with which individuals and households must deal, the supportive resources they seek, and the ways in which markets, institutions, and networks structure access to these resources. Each article written by a resident shows how living in a country affects the ways in which people use networks to access resources.

**Williams, Garnett P. 1997. *Chaos Theory Tamed*. Washington: Joseph Henry Press.** In this fascinating walk through the concept of chaos, Williams makes generous use of lists, graphs, field examples, summaries, and perhaps most important-friendly language to help readers understand the vocabulary and the significance of chaos theory in our lives. The book will help scientists, students, and others outside mathematics to use the concepts of chaos in working with data, and it will give the interested lay reader a foothold in the fundamentals of this new realm of thought.

## Dissertations

**Behrens, Dean. 1997. Self-Isolation and The Structuring of Support: The Relationship Between Stress and Network Evolution. Doctoral Dissertation, Social & Decision Sciences, Carnegie Mellon University.** In a study of men and women who have been tested for HIV, and their social support and information networks, the theory of action called Maximal Network Stability Theory (MNST) was tested, and expanded. Maximal Network Stability Theory focuses on the social psychological effects of stress, such as that caused by an HIV diagnosis, which causes individuals to actively restructure their personal networks in order to maximize the stability of their social environment. Why should individuals desire network stability during periods of stress? By maximizing network stability, the ego is minimizing stress due to the network itself (Barrera, 1981; Gottlieb, 1981). Such network based stress includes cognitive load due to changing role expectations. MNST guarantees the reliable availability of resources from the network. Network resources aid in dealing with life stressors. Thus, as the level of individual stress increases, the ego's need for greater network stability will increase. Thus during periods of stress ego will more actively restructure her or his network accordingly. In MNST the mechanism through which ties evolve is similar to "Constructuralism" (Carley, 1990, 1991). That is, the more information ego shares with an alter (interaction partner) and the more time spent with the alter, the more similar ego and alter become. Thus, the tie strength between alter and ego increases. Conversely, the more cognitively similar the ego and alter are the more likely they are to interact. However, unlike Constructural Theory (Carley, 1990, 1991), in MNST, differentiating information also has the ability to reduce tie strength by focusing attention on dissimilarity. This provides the mechanism through which ego can drop individuals from ego's network. MNST further assumes that individuals are able to determine the approximate stability of their own and others' personal

networks. In this research, seventy-nine participants were interviewed. Five participants were interviewed again, 7 months later. MNST predicts that people under stress will actively restructure their support networks in such a manner that they become smaller, denser, and more stress related. Analyses of self reported sources of support showed that respondents under stress had significantly smaller and denser networks. Analysis of responses to a hypothetical situation (preference analysis) provided additional support for MNST hypotheses. These analyses also suggested additional factors that affect interaction choice. These factors are: 1) family membership; 2) the perceived type of support provided by each network member; 3) the perceived amount of social support provided by each network member; 4) the perceived degree of similarity between each network member and the ego; and 5) the perceived frequency of current interaction between each network member and the ego. Qualitative analysis supported the quantitative findings and corroborated many of the hypotheses suggested by MNST.

**Smith, L. Ripley. 1996. Intercultural Social Support Networks: A Socio-structural Description of Expatriate Adjustment and Communicative Competence. Doctoral Dissertation, Dept of Communication, University of Minnesota.** The present study explores the connection between intercultural adjustment, social support networks, and communicative competence, as subunits of intercultural interaction. Three primary objectives were: 1) to explore the connection between intercultural social ties, host communicative competence, and cultural adjustment in a holistic fashion; 2) to compare the structure of intercultural networks across systems; and 3) to identify structures that are associated with, and therefore may facilitate, cultural adjustment. The study examines nine cases of expatriates from three cultural regions employing network analysis, communicative competence, and cultural adjustment measures.

Seven culture-general properties of intercultural social support networks are posited. They are: 1) Frequency of communication within the network links at large yields the resources necessary for developing cultural sensitivity; 2) Most intercultural supportive ties will be "fairly close friends;" 3) Balanced reciprocity will be the norm in intercultural links; 4) Multiplexity in intercultural ties will be modest (2-3 contexts) and less likely than in intracultural links; 5) Dense networks will tend to provide positive socialization models leading to cultural sensitivity while loosely connected nets will yield greater chances for growth in communicative competence; 6) Intercultural networks will contain between 20 and 30 supportive ties in order to provide generally satisfactory support, and; 7) Intercultural ties are not as multidimensional as intracultural ties and will normally provide a maximum of 2-3 modes of support. Additionally, The case studies present three significantly different architectures for intercultural identity. The first network structure tends to spread nodes out to the periphery with a single center, relatively homogeneous pattern taking on the shape of a wheel. Ties are radial and consist largely of home culture others. The second pattern exhibits multiple centers and a somewhat radial, predominantly weak host national tie socio-structure. The third structure has an integrated set of heterogeneous, strong ties in an elliptical core of the network. Each social structure appears to 'work' in the sense of creating a meaningful context for identity. Finally, the networks that exhibited an elliptical, interlocking structure with strong ties to host nationals appear to have the better balance in communicative competence and cultural sensitivity.

## Conference Presentations

### American Sociological Association

**Bian, Fuqin; Logan, John R.; Bian, Yanjie 1997. Intergenerational Relations in Urban China: Proximity, Contact, And Help to Parents. *American Sociological Association.***

Although most older Chinese parents do live with an adult son or daughter, most adult offspring do not live with parents. This study examines the relations of these noncoresident offspring with parents in terms of proximity, frequency of contact, & exchange of help. Based on a 1993 random sample survey conducted in two major Chinese cities, it is found that, in spite of the high level of coresidence, noncoresident sons & daughters live as close to parents as do adult offspring in the US, have more frequent contact, & provide more regular help to parents; these relationships are unaffected by whether parents coreside with another child. There is some evidence of closer relationships with sons than with daughters, but parents without a son receive as much total help as do parents with sons. The effects of these & other predictors are estimated in multivariate analyses, & results are interpreted in terms of the persistence or change of traditional family norms.

**Bullers, Susan 1997. Social Support and Psychological Distress: The Mediating Role of Perceived Control. *American Sociological Association.*** Explores the role of perceived control in the relationship between social support & psychological distress, using four different aspects of social support. It is hypothesized that those social support measures that distinguish between positive & negative aspects of social ties will be stronger Predictors or psychological distress, & that a significant portion of the effects of social support on psychological distress will be explained by changes in perceived control. Hypotheses were confirmed with perceived control mediating the effects of emotional support & demanding social ties on psychological distress. Instrumen-

tal support was not a significant predictor of psychological distress, & number of friends did not predict psychological distress after the effects of perceived control were removed

**Burt, Gordon John 1997. A Synergetics Model of Party Policy Dynamics: An Analogy with Speculative Markets. *American Sociological Association.*** Two broad issues are evident in recent contributions to mathematical sociology: (1) how to construct a conceptual framework that is both mathematically sophisticated & sociologically insightful; & (2) the appropriate relation between models of social systems & of economic systems. The aim here is to illuminate both key issues by addressing a particular problem in political science: the modeling of policy formation in political parties. As an alternative to the Downsian account of party policy formation, recent studies have suggested that party policy moves in an ideological range either at random or guided by rules. One interpretation of random policy movement can be round by drawing an analogy with the efficient market hypothesis for the movement of stock market prices. More recent accounts of the stock market employ a synergetics model & emphasize the contagion of opinion & the distinction between naive & sophisticated traders. These accounts are used to provide an analogous model of party policy formation.

**Carley, Kathleen M.; Butts, Carter 1997. An Algorithmic Approach for Locating Central Graphs and Graph Discrimination. *American Sociological Association.*** When are two graphs distinct? Presented here is an approach for addressing this question for unlabeled graphs that employs both a color-splitting algorithm for labeling & then aligning graphs & the subsequent application of the Banks-Carley technique (1994) for locating central graphs, which hinges on measuring the distance between networks using the hamming distance (Hamming, 1950). The central graph is that

network where each edge has appeared in 50+% of the networks in the set & is the network equivalent of a mean for a nonnetwork variable. Whether or not a graph is significantly different than the central graph depends on whether its hamming distance from the central graph is larger than would be expected given some distribution. The Banks-Carley technique is described in detail, & deemed untenable in many applications because of node labeling; eg, when collecting organizational charts, or citation networks, the nodes may not be labeled, or the same set of labels may not be appropriate for all graphs in the set. Despite having effectively unlabeled graphs, or at best colored graphs, the researcher might still want to know about the central tendency. A technique for locating central graphs for sets of unlabeled graphs is offered that involves two steps: (1) labeling the nodes based on a color-splitting algorithm, & (2) calculating the central graph using the Banks & Carley technique. Examples illustrate the strength & limitations of this heuristic approach, & simulation techniques are employed to generate the distribution of possible structures given the known organizational constraints on those structures.

**Chang, Dukjin 1997. The Nested Hierarchy of Korea's Chaebol Business Groups: Financial Liberalization and Isomorphism in a Post-Developmental Economy. *American Sociological Association.*** The nested hierarchy of South Korea's *chaebol* business groups is identified via a network analysis of 1989 internal shareholding data. Two possible explanations for the nested hierarchy are examined. Given the decreasing capital market transaction costs for the *chaebol* during the 1980s, the efficiency explanation of new institutional economics failed. The changing institutional environment of the *chaebol*-most importantly, the Monopoly Regulation & Fair Trade Act-is shown to have constrained how these business groups could realize their incentives to internally snowball capital inputs, thus leading to the nested hierarchy. This result provides significant implications for financial liberalization in a postdevelopmental economy.

**Chaves, Mark; Massad, John P. N.; Williams, Rhys 1997. Are Priests Employees? The State, Professional Networks, and**

**Change in Religious Organizations. *American Sociological Association.*** Event history data from US Catholic dioceses are used to examine the determinants of an organizational change by which priests are treated as employees rather than as independent contractors, as indicated by whether income is reported using W-2s or 1099 forms. In 1986, only 4% of dioceses treated priests as employees; today, 56% do so. Both qualitative accounts & network variables incorporated into the event history analysis show that the rate at which dioceses switch to the W-2 system jumps immediately after key events dramatizing changes in Internal Revenue Service regulatory practice, & is strongly predicted by diocesan exposure to the relevant professional network & proximity to other dioceses already using the W-2 system. Dioceses with more recently consecrated bishops also are more likely to switch. Results strongly support a neoinstitutional account of this organizational change, & suggest that mundane instances in which religious organizations embrace institutional patterns promoted by the state & carried by professionals rival instances of resistance & opposition in their sociological importance. New lines of research are thereby opened on the extent to which both religion & society are shaped by religious organizations' adaptation to state-driven institutional change.

**Dierkes, Julian B. 1997. Organizational Change and America's Corporate Leadership. *American Sociological Association.*** Data from *Standard & Poor's Register of Corporations, Directors and Executives*, matched with financial data from the *Compustat* dataset, are drawn on to examine fluctuations in the number of corporate offices in US Fortune 500 companies, 1974-1991. Purely functional explanations for such fluctuations are shown to be enhanced by the addition of time-effects in regression models. Whereas the number of corporate offices increased throughout the 1970s & fluctuated in the early 1980s, it decreased in the late 1980s & early 1990s. These trends are signs of the influence of the social environment on business practices. From a neoinstitutional perspective, it is argued that policy decisions by the state as well as the general business climate account for the increase in the 1970s & early 1980s. The decrease in the number of offices in

the 1990s is associated with changes in business ideology as evidenced by an increase in the discussion of downsizing.

**Dimitrova, Dimitrina I. 1997. How Do Remote Employees Work Together at a Distance?. *American Sociological Association.***

As working at a distance becomes an established mode of work, art, writing of traditional work forms is needed, redefining organizational time & space. How people work together when they are apart is examined via a study of teleworkers, ie, employees who work from home with computer & telecommunications technology. Two different modes of remote work are explored: organizational theorists claim that the nature of tasks determines how work is organized & managed; & sociologists emphasize the impact of the social structures in which people are embedded. An attempt is made to bridge these two sets of interests, investigating the resources that teleworkers need & the networks through which these resources now. These accounts are used to reconstruct how teleworkers coordinate their work with others & are controlled. Focus is on a comparison of two case-two individual teleworkers from different work groups who demonstrate different modes of remote work-based on a series of interviews. Results show that teleworkers with more routine tasks & work flow that includes sequentially different partners in a predictable manner can easily interact with others via media & be controlled by a normative framework-, however, teleworkers with tasks involving more negotiation, which are not easily standardized, & work flow that requires bursts of intensive interaction with different partners in a nonpredictable manner, need more face-to-face & real-time interaction.

**Dinelio, Natalia P. 1997. Forms of Capital: The Case of Russian Bankers. *American Sociological Association.*** Influenced by the constructionist tradition & work of Pierre Bourdieu, the capital of Russian bankers who are perceived as prime movers of the country's market transition is examined. Bankers were selected as Ss because they represent profit-making enterprises in a country where money & capital had pejorative meanings prior to the recent capitalist-style reforms. It was not

money, but social relations, that served as a primary medium of exchange in the Soviet system. Exploring what constitutes the major currency in today's post-Soviet Russia, also probed is whether the bankers' constructions of self & society differ from the prevailing code of the Russian/Soviet cultural repertoire that is anti-individualistic, anti-materialistic, & anti-capitalist. Survey data from 484 bankers & 61 interviews with managers from Moscow & St. Petersburg commercial banks demonstrate that these bankers possess substantial holdings in the form of money & social resources, & are also culturally well-equipped for market experiences. However, their economic, social, & cultural capital is only partially converted into symbolic capital, interpreted as the most universal form of capital. Inadequacy of symbolic capital may challenge the legitimacy of other economic, social, & cultural assets, & have negative repercussions for market-building.

**Hage, Jerald 1997. Organizational Complexity, Innovation and Institutional Context. *American Sociological Association.***

One area in which sociology has accumulated a considerable body of consistent findings is in the relationship between organizational structure & innovation. Two critical findings that have not received enough attention are highlighted: (1) because the complexity of the division of labor can be measured in six different ways, the importance of complexity has not been appreciated; & (2) which indicator is most relevant for explaining innovation depends on the institutional sector of education. Knowledge is packaged in different ways, impacting the division of labor in the organization. This analysis provides a way of understanding how general laws about organizations are possible even though there are enormous societal differences.

**Haythornthwaite, Caroline A.; Wellman, Barry 1997. Mediated Ties: Work, Friendship, and the Use of Media in Collaborative Work. *American Sociological Association.*** Social network data on communication by 25 university computer scientists show that work & friendship ties were associated with the number & kinds of media they used for different kinds of information exchange. The use of electronic mail (e-mail), & unscheduled & scheduled face-to-face meetings predominated.



Face-to-face contact was the medium of choice for weakly tied pairs who exchanged few types of information. Those with strong ties supplemented face-to-face contact with e-mail, but few pairs used synchronous desktop videoconferencing or the telephone. The intensity or work & closeness of friendship relations were each independently associated with greater frequency of communication, the exchange of more types of information, & the use of more media for information exchange.

**Kervin, John 1997. Returning to Sociology: Turnover Intentions and Work Group Subculture. *American Sociological Association.*** The study of employee behaviors & attitudes has largely made use of an individualistic view of workers, in part because of the use of survey methodology. As a result, employee behaviors & attitudes are generally seen as arising from & affected by characteristics of individuals & their work context. Socially mediated processes & influences have been largely ignored. Here, a two-phase panel survey of 274 nurses in a major metropolitan hospital examines the role of work group social processes in determining employees' turnover intentions. Results provide strong support for the hypothesis that an employee's turnover intentions are positively related to those of workplace friends. A second hypothesis—that the impact of friends' attitudes on the employee's own turnover intentions will be greater the less influential the individual-receives weak support. A final hypotheses—that this impact will be greater the more the individual socializes with workplace friends-receives strong support. Overall, results suggest that work group subculture is an important factor in determining employee turnover intentions. No other single factor, including work & pay satisfaction & organizational commitment, appears to affect turnover intentions as much as an employee's perceptions of friends' attitudes.

**Kitts, James A. 1997. Not in Our Backyard: Solidarity and Social Networks in Anti-incinerator Mobilization. *American Sociological Association.*** Addresses relationships between network ties & individuals' level of participation in an activist group, drawing on a multimethod case study of antiincinerator mobilization. Three explanations for differ-

ences in members' level of involvement are examined: attitudes, structural availability, & relational solidarity. After demonstrating that high- & low-level members are similar along a number of attitudinal dimensions, relational aspects, ie, in- & out-group solidary ties, cross-cutting organizational ties, & individual positions in a multidimensional field of organizational memberships are discussed. As expected, in-group solidary ties may facilitate participation while orthogonal solidarities may impede involvement. Although various extramovement commitments are often presumed to diminish individual structural availability, this appears to constrain participation in this group only under limited circumstances. Paradoxically, ties to other organizations diminish individual participation in this group only when the other groups have parallel goals, while ties to groups with orthogonal goals appear to facilitate participation.

**Lau, Yvonne M. 1997. Asian American Women: Engaged in Entrepreneurship. *American Sociological Association.*** Based on fieldwork & in-depth interviews with a local group of Asian-American and Asian immigrant women engaged in managing their own business enterprises, the triple oppression experienced by Asian-American women in the labor force is addressed. Though Asian-American women have played significant roles in shaping the economic, social, & political life of the Asian-American community, their contributions—especially in accumulating economic power—have been overlooked or undervalued. In recentring Asian-American women into the sociology of entrepreneurship, the extent of gender conflict in Asian-American communities is explored. Looking at how the labor market status of these women influences their roles in the family & community, the shifting power relations between traditional & new leaders are assessed. Preliminary findings regarding the impact of entrepreneurship on traditional gender-role divisions point to innovative agendas, arrangements, & strategies, both in the work & family arenas. Particularly in the latter context, respondents reveal that a significant part of their financial independence & entrepreneurial achievements can be attributed to their successful negotiations of the gender politics of their families.

**Lin, Nan; Ye, Xiaolan; Chen, Yushu 1997. Human Capital, Social Resources and Social Capital: Their Contribution to Socioeconomic Achievement in Taiwan. *American Sociological Association*.** In addition to the contributions of parental socioeconomic characteristics & human capital (education), it is argued that mobilization of social network resources in job searches (social capital) can have significant & direct effects on attained socioeconomic status. Drawing on data from the 1992 Social Change Survey in Taipei, Taiwan, structural equation models are constructed in which (1) gender, father's education & occupational status, & parents' clan identification are considered exogenous variables; (2) education, work experience, friends' resources (occupational statuses), participation in voluntary organizations (social, political, & alumni), & resources (occupational status) of the contact used in the job search are mediating factors, & (3) occupational status, authority position (supervision & decision-making participation), & wage of current job are endogenous variables. It is found that education represents an investment of parental human & social resources. Education significantly affects social resources, which, in turn, contribute to social capital. Further, social resources & capital have direct & significant effects on attained occupational status, which, in turn, affects authority positions & wage, beyond the effects of human capital, accountable in education & work experience. Also noted is significant gender inequality in wage, which remains after human capital & social resources/capital effects are accounted for. A call is made for more intensive comparative studies in specifying the relative contributions of these factors in different societies.

**Michalski, Joseph H. 1997. A Sociological Theory of Financial Altruism. *American Sociological Association*.** Attempts to develop a sociological theory of financial altruism by combining a network analytical framework with sociological reasoning. Alternative theories of altruism are considered, demonstrating how the various conceptualizations are linked to different strategies of explanations & different levels of analysis. A definition of financial altruism is proposed from a sociobehaviorist perspective. The theory offers several propositions involv-

ing social differentiation, social integration, intimacy, stratification, conventionality, cultural distance, group effects, & respectability. Each of these factors can be shown to be related to the behavior of financial altruism in social space. Discussed in conclusion are strengths & limitations of the propositions advanced & the general theory as currently developed.

**Nisbet, Paul A. 1997. Suicide Opportunity as a Function of Effective Network Size. *American Sociological Association*.** It is difficult to accept either race or gender by themselves as significant predictors of suicidal risk, yet suicide in the US generally occurs most frequently among the white male population & least among the black female population. To understand the roles of race & gender in this regard & discern what underlying factors are contributing to the large interpopulation differences in suicide rates, a theoretical model for determining opportunity to suicide is introduced. Its premise is that effective network size, governing available support resources, regulates opportunities to suicide. More specifically, the opportunity for individuals to kill themselves is a function of their effective network size. As effective network size decreases, available resources diminish, & opportunity to suicide increases. The argument is that while individuals react similarly to their respective networks, the variation in the size of effective networks for men compared to women, & for one racial group compared to another, is key in explaining racial & gender differences in suicide rates.

**Pashup-Graham, Jennifer 1997. The Importance of Family and Its Effects on Social Organization in a Mexican, Immigrant Community. *American Sociological Association*.** Human ecology, social disorganization, community attachment, & social order literature, as well as 2 years of participant observation, interviewing, & ethnographic research in a Mexican community (Archer Park) on Chicago's (IL) southwest side, are used to outline the system of social organization in the community & how this system is shaped by strong family ties, high rates of residential mobility, & a large immigrant population. Residents form dense networks of personal support & resource

sharing centered around family, with very few nonkin & neighbors included. While this has positive effects for the individual, it can be detrimental to the community, since there are inadequate neighbor networks & a wide-reaching system of informal social control is lacking. It is argued that while one would expect a community with low family disruption to experience less delinquency & crime, this is not the case in Archer Park. The area has high rates of crime & gang activity. Family-centered networks also translate into low rates of involvement with formal networks & agents of authority. Residential instability compounds the problems of low local friendship networks. High numbers of individuals continually moving in & out of the community make it difficult for neighbors to develop friendships & lasting ties. Continued mobility also results in lessened incentives for residents to invest in the community & become involved in local groups or organizations. Lastly, the community's large Mexican immigrant populations further barriers to community involvement. Immigrants often remain embedded in Mexican family networks while living in Archer Park. The nearness of Mexico, the ease of visits, & telecommunications make such continued involvement fairly easy-

**Peterson, Debra F. 1997. The Effect of Race on Kinship Support: A Meta-Analysis. *American Sociological Association.*** Researchers have used three models-cultural deviance, equivalence, & variance-to conceptualize the African-American family. Using the topic of kinship support, the extent to which past studies find a relationship between race & four kinship support outcomes (support given, support received, perceived support, & coresidence), & the extent of support for the three models are analyzed here using metaanalytic statistical techniques, drawing on 109 independent samples in 47 journal articles published 1965-1993. Initial findings show that African Americans are significantly more likely to give support to, receive support from, & coreside with kin. With the exception of coresidence, however, these differences are quite small. It is also found that study design characteristics have an impact on the race effect, particularly for support given & support received, the race effect for coresidence favor-

ing African Americans remains fairly strong even after controlling for the effects of other variables. A close examination of the data reveals some support for all three models. Given this fact, it is suggested that the current attempt to pigeonhole the African-American family into just one model may be pre-mature & unwise.

**Petersen, Eric J. 1997. Overcoming Distance in Medieval North Africa: A Case Study of Group Maintenance Mechanism. *American Sociological Association.*** Starting from the assumption that the local matters, & that face-to-face contact remains an important aspect of social relations, explored is how social groups can persist despite geographical dispersion. Georg Simmel's conception of group maintenance is applied to a historical case study of the Jewish merchant community in the medieval Islamic world-a social group that managed to maintain coherence despite having its members scattered at a time when transportation & communications were rudimentary. Geography is significant to the extent that it affects group commitment & the functions of the group; in general, dispersion weakens group commitment, but mechanisms that apply to the economic self-interest of members or that solve their life problems can effectively counteract geographical dispersion. In the case of the Jewish merchants, the most effective mechanism-the cooperative partnership-satisfied three powerful motivations simultaneously: a personal bond, economic self-interest, & religious requirements. These partnerships could not have functioned without some basic means of communication (& control) between merchants spread over the Mediterranean basin. Their postal system was also a crucial mechanism for overcoming distance.

**Robinson, Patricia A. 1997. Comparing Corporate Governance Structures in Japan and the US: Apples and Oranges or Just Different Slices of the Same Fruit? *American Sociological Association.*** Examines the relationship between relative stakeholder influence & organizational approaches to restructuring in Japan in the context of the literature on corporate governance & comparative systems, drawing on a survey of 75 of Japan's 300 largest manufacturers & their approaches to restructur-

ing, 1991-1995. Focus is on the relationship between (1) importance of various firm constituencies (stockholders, employees, customers, main banks, suppliers, affiliated companies, etc) as perceived by the head of personnel, (2) the time order in which various aspects of work force reduction (early retirement, attrition through hiring freezes, overtime reduction, personnel transfers, temporary factory closings, layoffs, etc) occurred; & (3) the organizational changes that resulted (shifts in proportions of various management levels & blue-collar employees, proportional changes in bonus & salary increases, changes in performance appraisal, etc). Approaches to downsizing provide a striking contrast to approaches taken by US firms as documented in the current literature.

**Sacks, Michael Alan; Uzzi, Brian; Ventresca, Marc J. 1997. Structural Holes in the World System: Structural Autonomy and Nation Status in the Global Economy: 1965-1980. *American Sociological Association*.** The structure of the world system has been well measured in recent studies, but the dynamics of positions in the structure remain unexplored. Recent efforts to map the structure of global trade have utilized network centrality measures to show that nations more central in the global network are economically more prosperous. However, centrality analysis does not attempt to provide an explanation for dynamics of global trade, but focuses on how volumes of trade & numerous trading partners define centrality in the global system. In contrast, structural autonomy analysis is used to investigate how a nation's position in the system of global trade flows enhances or constrains its ability to negotiate favorable trading terms with other nations. It is found that structural autonomy predicts nation status in the global system of trade.

**Sato, Yoshimichi 1997. Trust and Social Networks. *American Sociological Association*.** The rational approach & the emotional approach coexist in the study of trust. They are too diversified to be synthesized, so one approach—James S. Coleman's (1990 (see abstract 92cO 1 569)) expected utility model of trust—is extended to the other approach. There are two problems with his model, however: (1) it does not answer why the trustor cannot

expect the trustee's response for sure; & (2) Coleman has not built a formal model to support his statement that social networks make the trustee more trustworthy. Game theoretic models are built to solve the above problems. In the first model, it is assumed that there are two types of trustee—honest & greedy—and the trustor does not know which type is realized. The equilibria of this game reproduce the results of Coleman's formulation. A second model is built with  $N$  trustors & one trustee to explain effects of social networks. An assumption is added that social networks among the trustors are information channels through which information about past interactions between the trustors & the trustee flow. One equilibrium of this game shows that even the greedy trustee chooses to be trustworthy. This can be interpreted as the effect of social networks.

**Spenner, Kenneth I.; Suhomlinova, Olga O.; Thore, Sten; Land, Kenneth C.; Jones, Derek 1997. Strong Legacies and Weak Markets: A Study of Bulgarian State-Owned Enterprises during Early Transition. *American Sociological Association*.** The attempts at market transformation of the former socialist societies have brought into sharp focus the debates between the orthodox economic approach with its emphasis on rational responses of firms to macroeconomic policy change & sociological perspectives that stress the role of institutional legacies & path dependence. Here, some of these controversial issues are addressed by examining changes in organizational structure & performance of state-owned enterprises during the early phase of transition from the centrally planned economic system. Data from a longitudinal study of a large representative sample of Bulgarian state-owned enterprises, 1989-1993, are used to consider three issues: (1) the influence of changes in authority structure, work organization, technology, marketing strategy, & organizational boundaries, 1989-1992, on organizational performance in 1993 (operationalized as a relative efficiency measure that ranks organizations in a single industry on the basis of their inputs & outputs); (2) the degree of path dependency as measured by how the relative efficiencies prior to the reforms predict the relative efficiencies several years into transfor-

mation, & (3) the effects of strong vs weak markets on the levels of carryover. Findings show a fair amount of organizational change during the first years of transition, but these changes had made little difference in altering efficiency positions of state-owned enterprises. However, the level of carryover in relative efficiency, 1989-1993, was very high, confirming the hypothesis that the strong legacies affect organizational performance of transitional environments. Results also demonstrate that the stronger markets tend to weaken the impact of legacies on organizational performance.

**Van de Bunt, Gerhard G.; Snijders, Tom A. B.; Van Duljn, Marttje A. J. 1997. Friendship Networks and Rational Choice: An Actor-Oriented Dynamic Statistical Network Model. *American Sociological Association.*** A class of actor-oriented statistical models is proposed for closed social networks in general, & friendship networks in particular. The random utility models are developed in a rational choice framework. Based on social psychological & sociological theories about friendship, mathematical functions capturing expected utility of individual actors with respect to Friendship are constructed. Expected utility also contains a random (unexplained) component. It is assumed that, given their restrictions & contact opportunities, individuals evaluate their utility functions & behave such that they maximize the expected amount of utility. The behavior under consideration here is the expression of like & dislike (choice of friends). Theoretical mechanisms modeled include the principle of diminishing returns, the tendency toward reciprocated choices, & the preference for friendship relations with similar others. Constraints imposed on individuals include the structure of the existing network & the distribution of personal characteristics over the respondents. The models are illustrated with data collected from university freshmen at seven points during 1994/95, & from employees of a medium-sized general hospital at four points during 1995/96.

**van Huist, Yael; Madray, Heather 1997. Deterrents to Delinquency: The Impact of Social Ties. *American Sociological Association.*** Previous literature suggests that religiosity

deters adolescent delinquent behavior. Recent discussions have focused on individual variables in explaining behavior. Although these variables may play a role in producing delinquent behavior, it is contended here that it is important to acknowledge that cultural institutions mediate psychological & familial variables. The impact of social support received via religious & community involvements on the delinquent behavior of youth is examined, & it is hypothesized that religious & community involvements have similar effects in providing social ties. The Monitoring the Future dataset (Form 6, 1992) used to examine the effect of religiosity & community involvement revealed that religiosity has an effect on drug & alcohol use, but that community involvement has more of an effect on delinquency & norm-violating behavior. Moreover, the interaction between religion & community involvement appears to have the greatest effect in reducing drug & alcohol use & delinquency.

**Van Willigen, Mikriek M.; Drentea, Patricia 1997. Benefits of Equitable Relationships: The Impact of Sense of Fair Household Division of Labor, and Decision-Making Power on Social Support. *American Sociological Association.*** The impact of equity in intimate relationships on perceptions of social support is examined, specifically testing whether the distribution of power—reflected by perceived fairness of housework, household division of labor & decision-making responsibility—is associated with levels of social support for married & cohabiting individuals. Drawing on data from the 1995 Aging, Status, & Sense of Control Survey of US adults, analysis is limited to the 1,217 married or cohabiting respondents. It is found that performing an inequitable portion of the housework or feeling that one's portion is unfair decreases perceived social support for both partners. Similarly, the highest level of support results when partners contribute equally to household decisions. Subjective & objective assessments of housework predict social support equally well. Women do not perceive inequitable household responsibilities as more fair than men. Finally, social support explains some of the relationship between equity & depression. Social support is based in part on everyday experiences of sharing power in the

household & may be the mechanism by which equitable relationships affect psychological well-being.

**Younts, C. Wesley 1997. Justice, Expectations, and Procedural Consequences: Toward an Axiomatic Theory of Justice Process. *American Sociological Association.*** Extends Barry Markovsky's multilevel distributive justice theory to include evaluations of the fairness of allocation procedures. The theory assumes actors who seek to evaluate the fairness of a procedure form a cognitive structure within which they infer the anticipated consequences of that procedure (ie, expected rewards). Actors compared those expected rewards to the amount of rewards the actor believes would be obtained if fair procedures had been used. If actors perceive an incongruence between these amounts, they will experience injustice, manifested in negative emotions & in justice-restoring behaviors. From the formal axioms, several theorems are inferred: (1) the degree of negative emotion & the frequency of justice-restoring attempts is positively related to the degree of incongruence; (2) negative emotions & justice-restoring attempts are greater if an unfair procedure has negative consequences that if it has equally positive consequences; & (3) negative emotions & justice-restoring attempts will be lower the greater the degree of justification (ie, rationale) given for an unfair procedure. By incorporating the evaluation of procedural consequences into Markovsky's theory, tentative hypotheses regarding the simultaneous perception of distributive & procedural injustices can be developed.

**Winter Meeting, Methodology Section, American Sociological Association. Chicago, Illinois, April 5-6, 1998. Organizers: Thomas DiPrete, Rafe Stolzenberg, Christopher Winship.**

Keynote: Peter McCullough, "Some Remarks on Statistical Models"

Yamaguchi, Kazuo. "Multinomial Logit La-

tent-Class Regression Models: An Analysis of the Predictors of Gender-Role Attitudes Among Japanese Women."

Winship, Christopher. "Multicollinearity and Model Specification: A Bayesian Approach."

Abbott, Andrew. "Applications of Optimal Alignment Methods to Social Data: Review and Prospect."

Jasso, Willy. "Two New Justice Indexes."

Wasserman, Stanley. "Recent Research on Statistical Models for Social Networks"

Dow, Malcom and Roger Leenders. "Effects of Measurement Error and Network Process on Network Autocorrelation Model Estimates."

Becker, Mark, Michael Sobel, and Susan Minick. "Origins, Destinations, and Association in Occupational Mobility."

Haberman, Shelby. "Information-theoretic Approach to Analysis and Prediction of Categorical Response Profiles."

Manski, Chuck, and John V. Pepper, "Monotone Instrumental Variables."

Weakliem, David. "What Do Statistically Significant Results Signify?"

DiPrete, Thomas, Dominique Goux, and Eric Maurin. "A Multivariate Probit Model for the Study of Multi-Outcome Job Mobility with Censoring."

Mouw, Ted and Michael Sobel, "Cultural Wars and Opinion Polarization: The Case of Abortion"

**ISA XIV World Congress of Sociology, Montreal, Quebec. July, 1998. Session on "Methods of Social Network Analysis." Sponsored by Research Committee 33 "Logic and Methodology"; co-sponsored by International Network for Social Net-**

**work Analysis. Organized by Peter J. Carrington, University of Waterloo.**

**Pizarro, Narciso, Universidad Complutense de Madrid.** "A critique of the concept of social relation." The concept of relation in sciences: epistemological status. Requirements to state the existence of a relation. Regularities. Max Horkheimer and naturalism in social sciences: from Machiavelli to Hobbes. Social Relations: some definitions. The statement of existence. Social relations and Social Networks. Time and social relations. The time intervals of regularities. Where do regularities come from? Regularity and regulation. Social Processes and Social Reproduction. Social Positions and Social Relations as defined by Social Reproduction Processes. The proper time of Social relations.

**JiQiang, Xu, Michigan State University.** "Spatial autoregression models in network analysis." The spatial autoregression model deals with the relationship between the observation vector  $Y$  from a group of subjects, and the association matrix  $W$  which describes the relationships among all subjects. In the model, the two main estimants, the autocorrelation coefficient  $\rho$  and the variance of the random error term  $\sigma^2$ , are uniquely determined by the matrix  $W$  and the vector  $Y$ . But the commonly used computational technique for the estimation of  $\rho$  produces many large values outside of a sensible range for  $\rho$ , and even the interpretation of the estimate  $\rho$  itself is yet not well understood. All these facts restrict the use of network effects models with parameter  $\rho$ . This article explores the interpretation and estimation of estimate  $\rho$  as well as  $\sigma^2$ , emphasizes the importance of the extent of the consistency between  $W$  and  $Y$  which is captured by  $\rho$ , and makes it possible to apply the network effects models in practice. This newly developed technique for the estimation of  $\rho$  is especially useful in the social sciences where the data could be high in dimension, and the data are possibly highly correlated in complicated ways.

**Snijders, Tom A.B., University of Groningen.** "Analysis of repeated observations on social networks." For the analysis of repeated

observations on social networks, represented by digraphs, actor-oriented models provide a good and flexible approach. These models assume that between the observation moments, which can be separated by periods of arbitrary length, time runs on continuously and unobserved changes may take place. The models assume further that this continuous-time stochastic process of network evolution is driven by the actors (vertices) maximizing functions which are the sum of a fixed and a random component. Such models can be straightforwardly implemented as computer simulation models. Snijders (1996) and Van Duijn and Snijders (1997) proposed simulation-based algorithms for parameter estimation for actor-oriented models, focusing on the case of only two repeated observations. This approach is extended here to the case of multiple observations. Using some example data sets of friendship development among university students, this presentation explores the advantages that can be reaped from having more than two observation moments. Advantages are (1) improved convergence properties of the algorithm, (2) increased power, (3) better possibilities for checking model adequacy, (4) better possibilities for distinguishing between effects with similar consequences.

**Memoli, Rosanna, Universita' di Roma.** "Social networks as a resource in elite reproduction: A comparative research in 27 countries". The aim of my presentation is the applicability of network analysis to social stratification. Particularly the mechanism of recruitment and behaviour of "elites". By this term I mean a social strata made of people sharing the same position in a system of privileges and inequalities in a given social system. Resources and combinations of resources make up a framework to describe firstly the opportunity of access to the upper classes and then the opportunity to be, over time, stable in the strata. Through network analysis it is possible to create a structure, using structural equation, formed by a system of relations among variables. Network analysis can be seen both from a theoretical and an empirical point of view, though between these two dimensions a continuum does not necessarily exist. Often theoretical characteristics cannot be operationalized and vice versa relational techniques do not have

a strong theoretical background. Methodological problems, linked to the network approach in social research, are discussed with reference to a comparative research on leadership. The focus is on the cultural differences among countries when models of careers are seen within three different fields such as: Political, Bureaucracy, and Business organizations. The global sample is made up of 1,739 top managers, both males and females. The hypothesis to verify is the role played by formal and informal relations, considered as a combination of resources, to explain the access to the professional positions reached. During research implementation the main problem was the development of a network analysis based on non-network data. Different solutions are proposed as research strategies to allow the construction of a pseudo-network.



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 e-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. Subscription to SOCNET costs nothing and is available to all members of INSNA.

## Joining SOCNET

To join SOCNET, send an email message to **listserv@lists.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**

(Substitute your own name for "Steve Borgatti", don't join the 3.3% of the membership that has joined with my name.) The *listserv* software at Florida 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 (borgatts@bc.edu).

## Using SOCNET

Once you are a subscriber, to send a message to all SOCNET subscribers, just send email to the internet address

**socnet@lists.ufl.edu**

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@lists.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**

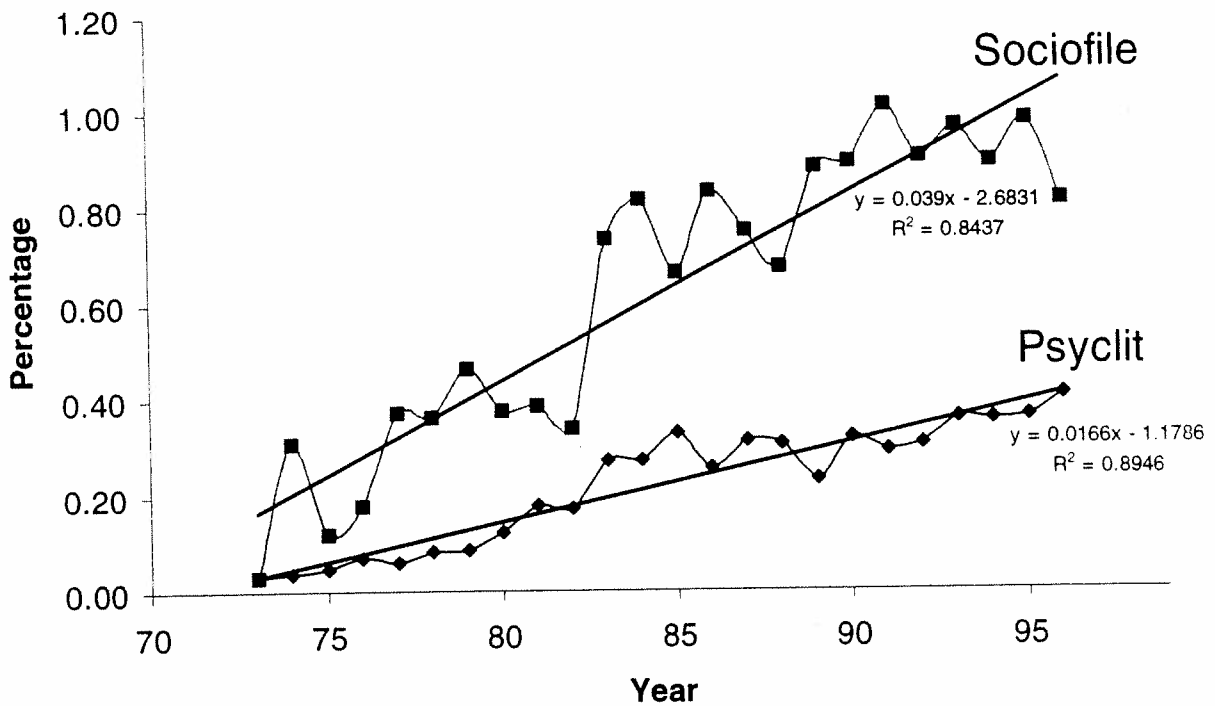
For information about additional commands, such as using the **DIGEST** option, send the command

**HELP**

to **listserv@lists.ufl.edu**. Again, don't send it to socnet or else everybody will get that message!

*See you on the listserv!*

## Percentage of Indexed Articles Containing “Social Networks” in the Abstract



# INSNA

International Network for Social Network Analysis

**Coordinator:**

Stephen P. Borgatti  
Dept. of Organization Studies  
Boston College  
Chestnut Hill, MA 02167 USA

borgatts@bc.edu  
Tel: 617 552-0452  
Fax: 617 552-4230  
<http://www.analytictech.com/borgatti>

**Promotion Manager:**

Devon Brewer

ddbrewer@u.washington.edu

**Information Technologies:**

Cathleen McGrath

cm3t+@andrew.cmu.edu

**Subscriptions:**

Candace Jones

jonescq@bc.edu

**International Affairs:**

Barry Wellman ..... wellman@chass.utoronto.ca

**Board of Directors**

Russ Bernard  
Phil Bonacich  
Alain Degenne  
Pat Doreian  
Martin Everett  
Lin Freeman  
Thomas Schweizer  
Frans Stokman  
Stanley Wasserman  
Barry Wellman

ufruss@nervm.nerdc.ufl.edu  
bonacich@soc.ucla.edu  
Degenne@criuc.unicaen.fr  
pitpat@vms.cis.pitt.edu  
M.G.Everett@greenwich.ac.uk  
lin@aris.ss.uci.edu  
Thomas.Schweizer@Uni-Koeln.DE  
F.N.Stokman@ppsw.rug.nl  
stanwass@kentucky.psych.uiuc.edu  
wellman@chass.utoronto.ca

**Staff**

Steve Taylor  
Jiffy Thomas

taylorstj@bcvms.bc.edu  
thomasju@bc.edu

Miedzynarowa Siec Analizy Sieci Spoiecznych  
International Network for Social Network Analysis  
Internationaal Network voor Sociale Netwerkanalyse  
Internationales Netzwerk zur Analyse sozialer Netzwerke  
Le Réseau International pour l'Analyse des Réseaux Sociaux  
Asociación Internacional para el Analisis de las Redes Sociales