# CONNECTIONS

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# small print

# NETWORK NOTEBOOK

*Computer Conferencing Research*

Ronald Rice (Communications, Stanford) would like to make contact with folks doing research on computer conferencing, including evaluations, effects and applications. He is trying to put a book together and is particularly interested in locating people doing dissertations now with results expected to come out within the next year.

*Warrens on Neighborhood Hit Parade*

Rachelle and Donald Warren's book, Neighborhood Organizers Handbook (University of Notre Dame Press, 1976) has been voted one of the "ten best books on neighborhood" in a survey of researchers conducted for the National Association of Neighborhoods. Robert Redford reportedly interested in screenplay rights.

*Structural Analysis Programme, Toronto*

The Structural Analysis Programme is a research group of thirteen University of Toronto sociologists doing network analytic research. In one way or another, the Programme supports much of the indirect effort and cost of getting CONNECTIONS out. In return, they have asked that they be able to enclose a brochure describing their Series.

*Small City/Regional Community -- Call for Conference Papers*

The Fourth Annual Conference on the Small City and Regional Community has as its theme: "The Impact of Growth: Social, Political, Environmental". Conference paper topics might include ethnicity, intergovernmental relations, economic growth or decline, ecology, service delivery, citizen participation and others. Proposals from practitioners as well as scholars are encouraged.

To submit a paper or organize a session, send 100-word abstract to Robert Wolensky, Dept. of Sociology/ Anthropology, University of Wisconsin, Stevens Point, Wisconsin 54481, U.S.A. Proposal deadline, December 1, 1980; paper deadline, March 1, 1981. Conference dates: March 26-27, 1981 at Stevens Point.

*New Journals*

Organization Studies is a new "international multidisciplinary journal devoted to the study of organizations, organization, organizing and the the organization in, of, and between, societies". Its scope "will range from the theoretical, even the speculative, to relevant contemporary problems and empirical research reports". Manuscripts to David Hickson (Bradford). Subscriptions (DM 48/ US $25) from Verlage Walter de Gruyter & Co. Genthiner Strasse 13, D-1000 Berlin 30.

The New England Journal of Human Services is "directed to health, mental health, education, and social service professionals who are caught up in the institutional craziness of the current system and who sense the need for some fundamental changes. It will serve as a forum for doers; one in which they can broaden their understanding of human service issues and explore a wide range of integrating ideas. Its overriding rationale will be to seek better ways of managing and delivering human services", viewing "the era of limited growth as an enduring one. Among the focal concerns will be: "How far should professionalism go? What happens when professionals serve as agents of the state? How can institutions link up with communities as a continuum of residence? What kinds of decentralist strategies are visible in times of fiscal constraint? Can the service system be made more accountable to clients? What is the role of the private sector in human services?"" Manuscripts and subscriptions ($15) to Mark Yessian and W. Robert Curtis, Editors, NEJHS, P.O. Box 9167, Boston, Massachusetts 02114, U.S.A.

Multinational Monitor seeks to conduct a critical discussion of the impact of international firms in developing countries. The initial issue reported contains an introduction by Ralph Nader, an analysis of multinationals' impact on Third World development, and reports on Kaiser Aluminum-Ghana links, corporate influence on the U.N. and U.S. corporate influence on Puerto Rico. Subscriptions ($15) from P.O. Box 19367, Washington, D.C. 20036, U.S.A. (from Tranet).

Up Against the Wall Street Journal reportedly exposes "the role corporations and the financial community plays in controlling people's lives". Initial handbook ($1) from Wall Street Action Project, c/o Box 271, New Vernon, New Jersey 07076, U.S.A. (from Tranet).

## Info Flows

Chris Winship is now Assistant Professor at Northwestern...Barry Wellman promoted to Professor at Toronto...Ivan Chase appointed Assistant Professor at SUNY-Stony Brook...S.D. Berkowitz appointed Associate Professor at Vermont...Nancy Brandon Tuma appointed to (U.S.) National Science Foundation's Sociology Review Panel...David Cooperman and Peggy Wiremen elected to Council of American Sociology Association's Community Section...Peter Carrington (Toronto) awarded SSHRCC Post-Doctoral Fellowship...Noah Friedkin (California-Santa Barbara) awarded Spencer Fellowship by (U.S.) National Academy of Education....Howard Newby appointed to Wisconsin faculty...James Beniger (Princeton) Visiting Fellow at Yale until September 1st 1980...Bonnie Erickson (Toronto) awarded SSHRCC research grant to perform a "Structural Analysis of an Urban Social Network" analyzing Ottawa bridge players using blockmodelling, clustering and spatial analysis...Barry Wellman (Toronto) awarded (U.S.) Center for Studies of Metropolitan Problems, N.I.M.H. grant to complete "East York social networks study"...Michael Schwartz (SUNY-Stony Brook) awarded Guggenheim,1980-1981, to study "The Power Structure of American Business"...Theda Skocpol at Institute for Advanced Study, Princeton, 1980-1981...Anatol Rapoport appointed Director of the Institute for Advanced Study, Vienna.

## Alternative Technology

National Science Foundation (U.S.) announces $1.7 million research programme--topics include urban innovation, rural revitalization, small scale industry, conservation, and the impact of alternative technology on society. Contact Ed Bryan, A.T. Program Manager, National Science Foundation, Washington D.C. 20550, U.S.A. (from Tranet).

## Nice Place to Visit

"The Rockefeller Foundation announces (1) a residential program for scholars and (2) a program for international conferences at the Bellagio Study and Conference Center, Lake Como, Italy."

"The scholars-in-residence program provides an opportunity for scholars to work for approximately 4 weeks on individual projects." The Foundation provides neither monetary nor travel assistance, but "once at the Center, the resident and spouse are the guests of the Foundation."

"The program of international conferences provides the facilities for small groups focusing on topics or problems of international significance."

For information, write Susan Garfield, Co-ordinator, Bellagio Study and Conference Center, The Rockefeller Foundation, 1133 Avenue of the Americas, New York, N.Y. 10036, U.S.A. (from ASA Footnotes)

## Network as Ideology

Tranet is a network linking Alternative Technology Centres transnationally. Its first principle is "the concept of 'Network'". The 50 A.T. Centres represented at HABITAT (where it was founded) strongly rejected the idea of "forming an 'association', 'federation' or other bureaucratic or hierarchical organization. The term 'network' was chosen to represent new concepts in both communications and governance. For communications, 'networking' implies an interactive exchange of information between organizations. It recognizes the superiority of people-to-people interchange over written, broadcast or computerized information. For governance, 'network' implies a non-hierarchical system of equal, independent, self-sustaining members. Unlike a bureaucracy a network is dependent on no one of its parts. No organ performs a specialized task necessary for the function of the whole. A net has no center. It is made up of links between parts. Tranet's role was to strengthen these links." (from Tranet)

## Network Analysis Fights an Expressway!

It seems that the highway people wanted to put an expressway through Crest Street (Durham, North Carolina), a long-settled, low-income, black neighbourhood. To block this, Elizabeth Friedmann, (Center for the Study of the Family and the State) prepared a "Family Impact Statement", reportedly the first in the U.S.A. to consider systematically how the relocation of many of the neighbourhood's residents caused by expressway construction would affect the functioning of local and kinship ties. She argued that the dispersal of extended family members would interrupt their ability to provide important daily services to one another and weaken the functioning of community mutual-aid networks.

As of this writing, we have no knowledge of the final outcome of the controversy.

## The Micro/Macro Question

"No one can doubt that voluntary action would be the ideal way to meet our problems. Co-operation remains effective in small settings, where people work directly with each other. But voluntarism cannot control the creat impersonal modern economy, where people no longer feel the obligations created by personal relationships and where the selfish benefit by the restraint of the virtuous.... One wonders...(if) people, by taking charge of their immediate lives and joining together in co-operative action, can solve such aggregate and structural problems as depression, unemployment, inflation, racial discrimination, energy." Arthur Schlesinger, Jr., "Hoover Makes a Comeback", New York Review of Books, March 8, 1979, p. 14.

One wonders, too, what Schlesinger's position on the Peace Corps was in the John F. Kennedy administration.

*Looking for Mr. GoodNet--New Consulting Opportunities*

"If you are single, separated, divorced or widowed, you'll find this practically oriented weekend seminar an excellent way to map out a strategy to meet people. You'll be able to benefit immediately. What are some of the approaches you can take to increase your social network? How can you feel more at ease in social situations? How can you gain more self-assurance? These topics will be covered in the class in a way that will enable you to go out and apply them to your life. The result: you'll meet new people and you'll have a better feeling about yourself. Dozens of people have already benefitted by this course through Canada and their stories of success are testimonies to the effectiveness of the course."

Course offered by Lynn Tribbling (Director, Rational Living Centre and The Women's Success Centre), The Skills Exchange, Toronto, January-February 1980.

*...and for during the day...*

"Networking: The Great New Way for Women to Get Ahead by Mary Scott Welch. This book shows women how to be part of the most exciting and rewarding movement to come along in years, one that provides contacts to give them new clout in their careers." (An ad by Academic Press Canada in the Toronto Globe and Mail.)

Didn't this used to be called the Rotary Club in Sinclair Lewis's day?

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*HOW TO PREPARE CAMERA-READY COPY FOR CONNECTIONS*

Our main purpose is to reduce the time and costs of producing the copy. To prepare Connections, we cut and paste copy for a photo-offset process, which reduces the typed surface by 25% in order to fit onto standard North American-sized paper. Copy should be clean for this process and the layout should be uniform and clear. However, acceptance of submissions does not depend on their being in camera-ready form.

Please use a carbon ribbon on a 12-pitch typewriter (12 letters to the inch). Please use Prestige Elite 72 typescript only. The title, author's name and affiliation, and the abstract should be in *Light Italic 12 pitch type*. All handwork should be done in black ink (not ballpoint, please). Typed surface should be 9" x 11-1/2" (23 cm by 29 cm). You will need to use paper that is wider and longer than either A4 or letter size, any over-sized, unlined, white paper may be used (i.e. the back of unused computer paper), as long as the typed surface is of the specified dimensions with a margin of not less than 1" on all sides. DO NOT type page numbers onto the manuscript, instead number the pages lightly but clearly in pencil on the upper right hand corner--outside the typed surface.

Please indent all paragraphs 5 spaces, single space text and double space between all paragraphs, headings, etc., for clarity after copy is reduced. Major headings, such as left-justified headings in capitals, should be used sparingly. Most section headings, including a heading for 'references' should be left-justified, lower-case and underlined. The title, etc., should be in italics (see above) and in capitals followed by a double space and the author and affiliation in lower case italics. Double space and indent the text 5 spaces, typing in Prestige Elite. Leave titles etc. blank if no italic script is available, but leave an appropriate space for its inclusion by us. For reference style follow the American Journal of Sociology, underlining journals and book titles, and using a 5 space indent for second and subsequent lines of the reference. Do not begin References or Footnotes on a new page, continue below text and single space between each item listed.

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*SOCIAL NETWORKS -- PRICE HIKE FOR VOLUME 3*

Effective September 15, 1980, the special INSNA subscription price for SOCIAL NETWORKS, Volume 3 (1981) will be US$26. The combined SOCIAL NETWORKS/CONNECTIONS price will be $34.

Effective January 1, 1981, back volumes of SOCIAL NETWORKS (Volumes 1 and 2) will cost $25.

All subscription fees for SOCIAL NETWORKS already received at the old price will be honoured.

Elsevier-Sequoia, the publisher of SOCIAL NETWORKS, states that the major reason for the price hike is the "steep decline of the US dollar from Swiss Fr. 2.25 per dollar when we started the journal to Swiss Fr. 1.55 per dollar today". Despite the price increase, subscribing to SOCIAL NETWORKS through INSNA is still a bargain--non INSNA members pay more than twice as much.

All subscription fees for SOCIAL NETWORKS or CONNECTIONS should be sent to INSNA, Toronto.

# MEETING CALENDAR

*SUNBELT SOCIAL NETWORK CONFERENCE*

The first conference, of a projected annual series, will be held February 20-22, 1981 at the University of South    Florida.  Papers welcome in any area of social network research:  Data, Theory, Methods and Applications.

Organizers:  H. Russell Bernard (Dept. of Anthropology, University of Florida, Gainesville, Florida 32611, (904) 392 2031) and Alvin W. Wolfe (Center for Applied Anthropology, Human Resources Institute, University of South Florida, Tampa, Florida 33620, (813) 974 2150).

Send titles and 300-word abstracts to both organizers by December 1, 1980.

The conference will be held at the University of South Florida's Chinsegut Hill Conference Center, near Brooksville (between Tampa and Gainesville).  Food and double occupancy lodging for 2½ days, $US43 in advance.  Registration fee $30.  To reserve a place send registration and lodging fees to December 1, 1980, to Alvin Wolfe.

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*NETWORK MODELS IN URBAN ANTHROPOLOGY, SYMPOSIUM AT THE 42nd ANNUAL MEETING OF THE AMERICAN*
*ANTHROPOLOGICAL ASSOCIATION*
*Washington, D.C. December 1980 (Alvin Wolfe, Organizer)*

Synopsis:

A variety of network models are proving useful in helping us to understand social processes in comples systems.  Network Analysis is popular now because it is possible now.  Modern electronic data-processing and modern forms of mathematics make feasible the pursuit of theoretical concerns that social science has not dealt with satisfactorily:  relations rather than things, process rather than form, generative rather than merely functional models.  This symposium summarizes the current state of network thinking and network applications in urban anthropology, and projects the next steps.

Alvin Wolfe (South Florida) "Introduction".
Gary Hurd, Barbara W. Lex, and E. Mansell Pattison (Medical College of George), "Three Styles of Involvement in Personal Networks".
Stephen B. Seidman (George Mason), and Brian Foster (SUNY-Binghamton), "Network Structures Derived from Collections of Overlapping Subsets".
Thomas Nattell, "Friednship Networks:  Their Formation and Functions in a Social Club for the Mentally Disabled".
Suxanne Salzinger and Sandra Kaplan, "Dimensions of Mothers' Social Networks that are Relevant to Child Maltreatment".
David Jacobson (Brandeis), "Network Mobilization in the Transition to Parenthood".

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*AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.  ANNUAL MEETING.*
*Toronto, 3-8 January 1981 (Alvin Wolfe, Arranger)*

Symposium on:  "Network Models in Health and Human Services".

Papers:

Alvin Wolfe (South Florida), "Network models in health and human services:  an overview".
Barry Wellman (Toronto), "Community ties and support systems".
Donald Warren (Community Effectiveness Institute, Ann Arbor), "Problem anchored helping networks".
Linda Gutwirth and Muriel Hammer (N.Y. State Psychiatric Institute), "Social networks and health".
Gary Hurd, Barbara Lax, and E. Mansell Pattison (Medical College of George), "Three styles of involvement in personal networks".
Christopher Tolsforf (Parent-Child Resource Center, Willimantic, Connecticut), "Stress and networks of children of divorced couples".
Eileen Edmundson, and Richard Weinberg (Florida Mental Health Institute), "Longitudinal comparisons of network characteristics and personality correlates of patients".

*1981 AMERICAN SOCIOLOGICAL ASSOCIATION MEETINGS.*
*Toronto, August 24-28 1981*

Sessions for the 1981 ASA meetings have just been announced. Papers should be submitted to organizers by January 10, 1981. Although almost all of the sessions are relevant to INSNA folk, the following seem especially interesting:

"Applications of Micro-economics to Sociological Problems: Prospects and Problems", Richard Berk (Sociology, California-Santa Barbara 93106).
"Class/State Relations", Maurice Zeitlin (Sociology, UCLA).
"Community Support Groups", Kathleen Auerbach (Sociology, Nebraska, Omaha 68132).
"Exploratory Data Analysis: Advanced Applications in Sociology", Bonnie Erickson (Sociology, Toronto, Canada M5S 1A1) and Samuel Leinhardt, (SUPA, Carnegie-Mellon, Pittsburgh 15213).
"Family/Kinship", Albert McQueen (Sociology/Anthropology, Oberlin College, Ohio 44074).
"Historical Sociology", E.Digby Baltzell (Sociology, Pennsylvania, Philadelphia 19104).
"Labor Market/Employment", Louis A. Ferman, (1444 Ferdon Road, Ann Arbor, Michigan 48104).
"Mental Health:, Sheppard G. Kellam, (Social Psychiatry Study Center, Chicago, 5811 S. Kenwood Avenue, 60637).
"Multi-National Corporations", Barbara Stenross, (Sociology, North Carolina, Hamilton Hall 070A, Chapel Hill 27514).
"Peasant Movements", James Petras, (Sociology, SUNY-Binghamton 13901).
"Political Sociology", Theda Skocpol (Institute for Advanced Study, Princeton, New Jersey 08540).
"Self-Help Groups", Norma Radol Raiff (106 Markham Drive, Pittsburgh 15228).
"Social Movements",William Anderson (NSF, 1800 G Street, N.W. Washington, DC 20550).
"Social Networks", Charles Kadushin (Room 1612 CUNY Graduate School, 33 W. 42nd Street, New York 10036).
"The State", Erik O. Wright (1302 Rutledge Street, Madison, Wisconsin 53703).
"Stratification/Status/Mobility", (Sociology, Ballantine Hall 778, Indiana, Bloomington 47401).
"Urban Sociology", Ann Lennarson Greer (Urban Research Center, Physics Building 450, Wisconsin, P.O. Box 413, Milwaukee, Wisconsin 53201).

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*PAST MEETINGS*

*AMERICAN ORTHOPSYCHIATRIC ASSOCIATION. ANNUAL MEETING.*
*Toronto. 7-11 April 1980.*

Selected Sessions:

"Healing Families in the 1980's: Clinical and Social Applications of Family Networks", Uri Rueveni, Ross Speck, Joan Speck, Carlo Sterlin, David Trimble.

The conceptual and theoretical framework underlying the panelists' work with the family and its extended social network is explored. Included are clinical models as well as the potential use of these models in working with family networking, family reunions, and a variety of crisis interventions which can benefit from mobilizing the extended family and social support systems.

"Following a Child Through Chaos: Use of Network Approaches as a Matrix in the Treatment of Displaced Children". Paul Fine, Edwina Leon, Ida Martinson, Julian Rubenstein, Nathalia Zimmerman.

Network approaches to situations in which children are experiencing displacement or family dissolution will be presented. Included are: situations of divorce, foster care, minority adoption, and dying children. Intent is to stimulate active exchange of experience in the use of networking by session participants.

"When Systems and Networks Strategists Join the Bureaucracy". Anita Menfi, Donald Brown, Nathan Epstein.

Many clinicians who have chosen public practice as a viable career choice began as family and network strategists. Panel will explore how clinicians transfer this epistemology into roles as mental health administrators, managers and program developers. The inevitable conflict which results when this new approach collides with the hierarchical structure of the usual bureaucracy will focus the discussion.

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*METHODS IN SOCIAL NETWORK ANALYSIS*
*Laguna Beach, California. 13-16 April 1980. (Linton Freeman, Organizer)*

Reliable information has reached us that this conference was held to assess the current state and future prospects of network analytic methods.

If one of the participants would send us a list of papers (better still, accompanied by abstracts), we would be delighted to publish this in the next issue.

Participants:

Phipps Arabie (Psychology, Minnesota), Stephen Berkowitz (Sociology, Toronto), Phillip Bonacich (Sociology, UCLA), Scott Boorman (Sociology, Yale), John Boyd (Social Sciences, California-Irvine), Ronald Burt (Sociology, Pittsburgh), Brian Foster (Anthropology, SUNY-Binghamton), Linton Freeman (Social Sciences, California-Irvine), Greg Heil (Computer Science, Toronto), Edward Laumann (Sociology, Chicago), Peter Marsden (Sociology, North Carolina), J. Clyde Mitchell (Nuffield College, Oxford), Ronald Rice (Communications Research, Stanford), William Richards (Communications, Simon Fraser), A. Kimball Romney (Social Sciences, California-Irvine), Stephen Seidman (Mathematics, George Mason), John A. Sonquist (Sociology, California-Santa Barbara), David Strauss (Statistics, California-Riverside), Douglas White (Social Sciences, California-Irvine).

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*AMERICAN PSYCHIATRIC ASSOCIATION. ANNUAL MEETING.*
*San Francisco. 7 May 1980.*

1-day course on "The Uses of Networks and Social Support in Therapy." Participants: Alvin Wolfe, Eileen Edmunson, Richard Gordon, Richard Weinberg.

This course reviews the development of social network theory, explores relationships between social networks, stress, physical and mental illness, and introduces a method of assessing psychiatric interventions based on natural support providers. Participants learn how to use a network assessment instrument to analyze patients' social networks. A case study demonstrates the use of social network data in clinical analysis and treatment. Group strategies for network change are also reviewed, e.g., the creation of mutual aid networks.

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*THE STATE OF THE ART IN ETHNIC AND IMMIGRATION STUDIES IN NORTH AMERICA*
*Toronto. 29-30 May 1980.*

Selected Papers:

"Studying the impact of ethnoreligious group membership on social structure: the case of practising attorneys", Edward Laumann (Chicago).
"Method and substance in ethnic research", Ivan Light (UCLA).
"Ethnic revival in French Louisiana: a comparison with Francophone minorities in Canada", Gerald Gold (York, Toronto).
"Recent directions in anthropological studies in migration", Stuart Philpot (Toronto).

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*FOURTH ANNUAL POLITICAL ECONOMY OF THE WORLD-SYSTEM CONFERENCE.*
*Baltimore, Maryland, 13-14 June 1980. (Richard Rubinson and Katherine Verdery, Organizers)*

Papers:

THE SEMI-PERIPHERAL STATE AND DEVELOPMENT: "Essence and Variation: Approaches to the Study of Contemporary Brazil", Walter Goldfrank (California-Santa Cruz); "Revolutionary State-Formation in Mexico, 1920-1932", Richard Tardanico (Tulane); "The State as an Instrument of Induction: The Case of Greece", Kostis Papadantonakis (Essex Community College).

CYCLES AND TRENDS OF THE WORLD-SYSTEM: "Long Waves, States of Accumulation, and the Size of the Capitalist Enterprise", Albert Bergesen (Arizona); "Structural Antecedents and Consequences of Statism: Synthesis and Agenda", Francis O. Ramirez (San Francisco State) and George Thomas (Stanford); "Intermediate Classes in a Bipolarizing Structure", Dale Johnson (Rutgers).

CYNAMICS OF DEVELOPMENT IN PERIPHERAL AREAS: "The Agrarian Causes of the Iranian Crisis", Nesar Ahmad; "Motion in the System: Coffee, Color and Slavery in 18th-Century St. Dominque", Michel-Rolph Trouillot (Johns Hopkins); "African Entanglement in the Capitalist World-Economy", M. Nelson-Richards (Howard); "The British Colonial Empire in India: Bengal", Nirmal K. Sinha (Morgan State).

THEORETICAL ISSUES IN THE STUDY OF THE WORLD-ECONOMY: "The Reproduction of Material Life: The Integration of Women's Work and Oppression into Dependency Theory", Roberta M. Spalter-Roth and Eileen Zeitz (American); "The Legitimacy Crisis: A Conceptual Analysis", David Freidrichs (Scranton); "Political Regionalism and Struggles for State Hegemony", James Lunday (Johns Hopkins); "Dependency, National Economy, and Inequality", Sally Ward (New Hampshire).

STRUCTURAL TRANSFORMATION OF THE WORLD-ECONOMY: Terence Hopkins and Immanuel Wallerstein (SUNY-Binghamton).

*EXCHANGE/NETWORKS CONFERENCE*
*State University College-Buffalo.   June 23-24 1980.   (Frank Southard, Organizer)*

This conference, funded by the American Sociological Association, reportedly was organized on behalf of a research group working on "elementary theory—a general theory of social action that emphasizes both the social structural and social psychological perspectives. It has its roots in Marx and Weber, exchange theory and social network analysis". Participants sought to "develop models that include symbolic and material exchanges" and develop "elementary theory as it applies to issues of social structure, constraints upon individual action, information and belief systems".

Participants:

Bo Anderson (Michigan State), Michael Loukinen (Northern Michigan), Kichero Iwamoto (Santa Clara), Steven Gilham (Missouri-Kansas City), Knut Hansen (Wayne State); and David Willer, John Brennan, Daniel wildcat, Richard Stephens (Kansas).  (From ASA Footnotes.)

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*FIRST GLOBAL CONFERENCE ON THE FUTURE*
*Toronto.   20-24 June 1980.*

Selected Sessions:

"Computer Support for 'Collective Wisdom'":  reviews of the use of computer-based communication-information systems to collect and amplify the wisdom of individuals to solve common problems.

Speakers included:  S. Roxanne Hiltz (Upsala College, N.J.), Murray Turoff (N.J,I.T.), Julian Scher (N.J. I.T.), Harry Stevens (Participation Systems, Winchester, Massachusetts), Peter and Trudy Johnson-Lenz (Lake Oswego, Oregon),  Robert Theobold (Wickenburg, Arizona).

"Old Ties in New Bundles:  The Future, Present and Past of Community".  Barry Wellman (Toronto).

Rather than searching for the single apt descriptor of community under given macroscopic conditions, we'd be better advised to consider different network structures as alternative means of accessing and controlling resources.

"Formal and Informal Global Networks:  The Pros and Cons", Yoneji Masuda (Institute for Information Society, Japan), Gordon Thompson (Communications Studies, Bell Northern Research, Canada); Ramesh Verma (Communications ACC, India).

This essential ingredient in the global communications revolution opens vast horizons for information dissemination and world-spanning solutions to problems but also alters the parameters of human contact. Will the phrase "terminally ill" take on a new significance? Is information overload a positive human experience?

"The Collapse of Vertical Integration/Global Commerce Within Redefined Geographic Relations", Gordon B. Thompson (Bell-Northern Research, Canada); Kimon Valaskakis, GAMMA Group, Universite de Montreal)

Does instant access to data anywhere within an organization make traditional structure obsolete?  Business organizations move away from paper and this session looks at how business as we know it makes the transition.

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*AMERICAN POLITICAL SCIENCE ASSOCIATION ANNUAL MEETING.*
*Washington, D.C.   28-31 August 1980.*

"Neighborhood Stability:  The Effects of Social Support Systems and Neighborhood-Based Organizations and Institutions."  Sponsored by NORC.

1.   "Neighborhood Support Systems, Neighborhood Organizations, and Neighborhood Stability."  Roger Ahlbrandt, Jr. (Pittsburgh).

2.   "Strengthening Neighborhood-Based Support Systems--An Empowerment Model."  David Biegel, Washington Public Affairs Center, Southern California.

3.   "Neighborhood as a Support System."  Donald Warren, Sociology, Oakland University.

# RESEARCH REPORTS

*A GUIDE TO THE NETWORK THERAPIES*

*David Trimble (Dept. of Mental Health, 92-94 Walnut St., Saugus, Mass. 01906)*

ABSTRACT:

This paper reviews the field of "network therapy" -- defined as intervention into social networks with psychotherapeutic intent. It discusses six network therapy strategies: full-scale family network assembly, network session, generalist problem-solving, ecological system intervention, network construction, and community network therapy. The contemporary network therapist may, depending on the problem and the practical setting, use elements from several or all of these pioneer strategies in a psychotherapeutic intervention. An extensive annotated bibliography is provided.

Introduction

This paper introduces the field of "network therapy" -- intervention into social networks with psychotherapeutic intent. It will discuss the different strategies which have historically developed in the field. Each strategy corresponds roughly to a relatively distinct cluster in the network of network therapists, at a time (mid-70's) when there were relatively few ties across clusters. Publications originating from each cluster had reported most of the pioneer work in network therapy by the late 1970's. Growth of the literature facilitated closer linkages throughout the network of network therapists. The boundaries between clusters have further relaxed with a wave of "early settlers" joining the "pioneers" on this challenging frontier of mental health technology.

Contemporary network therapists draw freely from the theoretical, technical, and ethical contributions of all the pioneers, and the contemporary practice of network therapy combines elements of theory and practice from several or all of the strategies presented here (Speck and Speck 1979; Turkat 1980). Network therapy is generally practiced by psychotherapists. It usually serves as an alternative and supplementary mode of treatment which is itself manifold in the alternative technical strategies it provides. The psychotherapist who can draw on network therapy as a treatment resource can master a far broader range of problem situations, and can cope more effectively with situations involving severe crisis or disability. (See also the review articles of Erickson 1975; Mitchell and Trickett 1980; Pattison 1973, 1976; Pattison et al. 1975.)

All the practical approaches to mental health problems described below either employ the concept of social network or deal with phenomena to which the concept of network is well-suited. Networks which are "treated" in network therapy almost always are focussed around an individual or family in distress (the client). They include people from some or all of the following categories of relationship with the client: family and others sharing the same roof (household), relatives, friends, neighbors, work associates, fellow members of church or voluntary associations, clergy, human service workers, etc.

Personal and family networks are the source for affective (emotional) and instrumental (practical) resources which the individual and family require for survival and growth. Psychotherapists are called on when a client is for some reason not meeting his needs through his network. The network therapist may in some cases decide with the client's permission to involve the network in treatment, in order to improve the network's capacity to generate and share emotional and practical support and/or to help the client to achieve a better mutual adjustment with the network. In other cases, the client and therapist may agree on the client's need to separate from his network. In addition to individual psychotherapy, the network therapist may in such cases give the client access to a transitional network, or provide some assistance for the client's efforts to construct a new network. Pattison (1973; 1976) provides a clear and conceptually coherent frame of reference ("open" versus "closed" system psychotherapy) to guide the clinician deciding whether to treat the client and network or to treat the client separately. Given the dramatic differences between conventional and social network psychotherapy, particularly in the ethically sensitive areas of privacy and confidentiality, it is essential that the client be a fully informed participant in the choice of treatment strategy.

All network therapies share common appreciation for the natural process of meeting human needs which is usually automatic within networks, respect for the problem resolution and healing capacities of networks, willingness to depart when necessary from conventional psychotherapeutic roles, and resistance to shifting responsibility from primary to secondary relationships.

## A. Full-Scale Family Network Assembly (Attneave, Rueveni, Speck)

The first to emerge and still the most dramatic, this approach involves a conductor and team who direct the family or person in distress to invite as many members of their network as possible to a series of two or more assemblies, at which the team helps the assembled network to resolve the problem situation. The network therapist will seldom use this technique. It is usually employed when other approaches have proven insufficient and there is either acute crisis or intense distress in the problem situation.

The full-scale assembly is presented to the client in as full, frank, and detailed a manner as possible, with particular emphasis on the reality that confidentiality is not possible in such a treatment setting. If a person or family has been informed as fully as possible about the full-scale assembly and has chosen this treatment option, then the conductor and/or team help the client to generate as many names as possible from as many categories of relationship as possible. The client is responsible for all invitations to these members of the network. The full-scale assembly requires at least 20 participants, with an optimum somewhere between 50 and 80.

Conducting a clinical intervention through the melodrama, confusion, and overwhelming emotional contagion of a full-scale assembly is difficult, but not impossible. The conductor is supported by his membership in a team of three to five clinicians trained in network therapy. Many of the relationships among the team members are longstanding ones, and the team has spent enough time working together in preparation for the assembly so that the orchestra of individual and group unconscious processes within the team has been "tuned up." This small team network of three to five is extremely active; sometimes dispersed among the larger crowd to gather information and facilitate group responses to the conductor's directives; sometimes clustered together in a corner (or, if necessary, shouting at each other across the room) to consult on the group's responses and agree on how next to proceed. Such a team is able to recognize certain characteristic energetic states in the group process, and to manipulate the group process so as to intensify, stabilize, or change those states.

These manipulations are carried out in accordance with a spiralling sequence model which arranges the group states in the following sequence: retribalization, polarization, mobilization, depression, breakthrough, exhaustion/elation, returning to retribalization. Clinicians can be trained to recognize the indicators of each stage/state in the group process, and two books, Speck and Attneave's Family Networks (1973) and Rueveni's Networking Families in Crisis (1979), provide a wealth of specific techniques for the team to use in moving the assembled network through the sequence.

Additional tasks of the team are as follows:
1) mobilizing the network for the productive activities of sharing, healing, mutual support, and problem-solving; 2) identification of the activists (a relatively small number who emerge as leaders indigenous to the network), and development of mutual support and information-sharing relationships with them, during and between the assemblies; and 3) direct psychotherapeutic intervention, employing the healing energies available through the assembled "tribe," at appropriate moments in the sequence of the group meeting.

The full-scale assembly is a powerful intervention, capable of producing substantial psychotherapeutic gains in the index patient, in the family, and often in other participants whose needs were not originally apparent. It is usually possible after an assembly to continue treatment with more conventional therapies; a substantial gain, given that the failure of conventional therapy is one basis for using this intervention. The full-scale assembly produces a substantial, if temporary, change in the structure of the network, as support groups or "committees" are constructed around particular members of the network to assist them in their change and growth.

The inventors of this network therapy approach continue to emphasize that the full-scale assembly draws from ancient traditions of public healing which predate medicine and psychiatry. The practice of the conductor resembles that of the witch doctor or medicine man far more than that of the psychotherapist. Conducting a network assembly, one allows for a fusion of one's experience with that of the assembled network. One's speech and actions become a vehicle for the generation of the network's unique symbols, symbols which guide the group in healing and helping the distressed persons for whom they have assembled. Many of the "magical" effects generated by the group, which serve to support the identity of the network and membership within it, and to reinforce values of sharing and mutual helping, are sustained over the years by the network itself. Ceremonies of marriage,

graduation, birth and naming; wakes and funerals; family reunions; these and other gatherings can provide an occasion for the "retribalization" of the network.

Clients' resistance to a full-scale assembly may vary with ethnicity and local culture. It is generally true that families are reluctant to allow public discussion of their difficulties. Although the team may agree not to reveal certain information to the assembly, and any psychotherapist who is invited by the family will retain with his client control over the confidentiality of their communications, the team nevertheless emphasizes that "family secrets" are contributing to the current destructive situation, and insists that as much information as possible be brought into group discussion during the assembly meetings. Resistance to painful public disclosure is one reason why full-scale assemblies are usually reserved for situations of acute crisis or intense distress. In such circumstances, the anticipated pain of public disclosure can be perceived as more tolerable than the anticipated persistence of current situational pain. Generally, once the client has agreed to the terms for a full-scale network assembly, it is likely that at least one meeting will actually take place.

Situations involving substantial suicidal and/or homicidal risk often qualify for the full-scale network assembly approach. Before agreeing to a full-scale assembly, conductor and team will have assessed the life-threatening potential of the system, and have concluded that the intervention would be more likely to reduce than to exacerbate the risks.

This group defines the family network as including household family and all the relatives, friends, neighbors, work associates, service workers (e.g. clergy, agency worker, psychotherapist), and others who have relationships of "lasting significance" with the person or family in distress. They describe the effects of their technique as transformations in a dynamic system (all network therapists, as do many family therapists, employ an explicit or implicit system theory). "Reconstitution" of the network, or "revamping the social field" is accomplished through changes in dyadic relationships or in the network of relationships as a whole. Pathological dyadic "binds" are loosened and constructive dyadic "bonds" are tightened. Temporary support committees form new clusters, or add new members to old clusters. Activists tend to move to positions of greater centrality. Overall, the intended effect is a tightening of linkages throughout the network, achieved through a substantial increase of communication within the network.

These objectives for change in the client's network were developed originally for clinical work with schizophrenics, and were designed for communication dysfunctions and family isolation which have been observed in the networks of this clinical population. The full-scale assembly involves other objectives for the network which apply to a broader range of clinical populations. These are the mobilization and sharing of resources (material goods, energy, information, understanding and compassion) available through network relationships, and the strengthening of the network's capacities for support, satisfaction, inspiration, and control.

The early literature from this group of pioneers reveals implicit assumption of the "community lost" perspective in contemporary social theory (Wellman 1979). The full-scale network assembly was described as a corrective to an assumed alienation of the urban household from its potential supportive networks. The literature emphasized assemblies composed primarily if not exclusively of primary relationships among family, kin, friend, and neighbor. The technique of full-scale network assembly has proven effective across a broader range of networks. In my current practice with institutionalized chronic patients, I have assembled networks composed of equal proportions of the client's personal and family primary ties, fellow patient primary ties, and secondary ties with service workers. These assemblies can be effective for a broader range of objectives than implied in the pioneer efforts, which treated a smaller proportion of secondary relationships in the assembled network.

Followups, using interview, clinical observation, and questionnaires, have found clinical efficacy with individual and family clients, changes in the lives and networks of invited participants, and continued motivation from network members to assist the client. There have not yet been any formal research studies to examine these claims. Such studies would be particularly helpful for the discussion of ethical questions raised by such practices as suspension of conventional clinical confidentiality and efforts to increase linkages throughout the network.

B.  Network Session (Garrison, Hansell)

This approach employs a much different metaphor than the village healing ceremony. The network session is analogous to the intense negotiation session, a drama in which the participants must surmount their passions and reason with each other in order to arrive at an agreement reconciling their interests. The convener of the network session will, like the conductor of the full-scale

assembly, work with the strong passions of the group. Instead of using this work to enter unconscious levels of group process as does the conductor, the convener instead draws the group up out of its unconsciousness onto the level of conscious, rational problem-solving and contractual relationships.

Network sessions can be handled by a single intervener, who draws up a list of participants with the client. Network sessions are much smaller, ranging from five to 20 participants, with an optimum around a dozen. The list is selective for the most significant emotional and practical relationships in the client's network. Consequently, there are proportionally more secondary relationships in the network session than in the full-scale assembly.

The conveners's task is to mobilize the affective and instrumental resources available through the assembled members of the network, and to mediate among the members so as to achieve agreement on a strategy for mutual assistance for the distressed client. The sequence model (informal gathering, "laundry lists" of complaints, transformation of complaints into goals for change, development of a unique group decision-making process, testing of that process, then "recycling" if necessary) allows for the use of many counseling and behavioral contracting techniques. One or more sessions may be convened, depending on the network's response to the intervention.

Outcomes of the network session are similar to those of the full-scale assembly, with less emphasis on tribal mystique and more on formal agreement. Individual psychotherapeutic changes can be quite as dramatic, with intervention based on a carefully constructed model of individual and system crisis. Structural change in the network is manifest in the contractual agreements, rather than in the formation of temporary committees.

Because the network session involves a smaller group and the most important relationships, clients are less resistant to this approach. Because it requires one therapist rather than a team, practitioners and agencies are also less resistant. Crisis and distress need not be as extreme. The network session is therefore applicable to a broader range of situational problems in mental health practice than is the full-scale assembly.

The network session does not work well with groups over 25 in number, and should be avoided when the intensity of emotion and/or severity of psychopathology in the situation appear likely to overwhelm the convener's efforts to mobilize rational group process. Full-scale assemblies can handle larger groups, and are better suited to managing unconscious and irrational group process.

Although their definition of the client's social network does not differ substantially from that used by full-scale assembly practitioners, Garrison and Hansell assemble a smaller group. The full-scale assembly conductor strives to gather together as many people as possible with any degree of significant relationship with the client, current or historical, positive or negative. The network session convener selects only those people with a current potential to provide the affective and instrumental resources necessary to restore the client to functioning. The network session excludes people the client does not want to attend, and people whose relationships with the client are primarily destructive.

The network session approach de-emphasizes the transformation of pathological relationships, and emphasizes the development of the most helpful relationships. The goal of the network session is to "create a network from an unorganized social field, i.e. create a synergic linkage between family, friends, and agencies." In the case of multiple-problem families, this support network, heavily populated by human service workers, may resemble a "mini-human service system," which "provides coordinated service delivery while helping the family develop more effective coping mechanisms."

Hansell's "seven attachments" to the environment (biological, identity, intimacy, a role offering opportunity for dignity, purchasing power, and a personal value system) describe essential needs which the individual must meet through transactions with his social environment (Callan, Garrison, and Zerger 1975). They provide a guide for assessment of the strengths and weaknesses in a client's network.

The network session approach to crisis resolution is based on analysis of the characteristic dynamics of person and network in a crisis situation. The person's transactions with the environment undergo disruption. The person experiences a loss of influence, and searches to establish or renew emotional attachments in current and past relationships. These changes can produce enlargement or other transformations in the personal network. The network itself may respond to the behavioral deviance of the person in crisis by extrusion. This may lead to reciprocal alienation, and to severance or attenuation of ties. The objectives of a network session convened for crisis resolution are prevention of extrusion, maintenance of the person in his usual position in his social field (rather than recruitment into an institutional caretaking network), and improvement of the caretaking

capacity of his current network. In such situations, the convener must assure withdrawal of new ser-
vice relationships as soon as possible following crisis resolution and restoration of normal function-
ing between person and network.

Garrison's followups found improvement or stability in client and network, although he acknow-
ledges the difficulty of monitoring the effects of the network session on other than the index
patient. This creates "an obligation to the participants to create a climate where, at the least,
no harm is done."

## C.  Generalist Problem-Solving (Curtis)

Curtis' work provides transition between the first two categories, which emphasize specific
technical interventions, and the following categories, which emphasize particular orientations and
frames of reference for network interventions in clinical practice. Curtis has described a specific
network intervention technique, but the power of his approach lies in his strategic systems manage-
ment approach to problems of human service delivery.

The technique of team problem solving in a social network can involve groups as small as three
or four in number. The sequence model (bringing the network together, defining the problem, identi-
fying and generating resources for change, contracting for change, evaluating the contract, and
terminating) reveals similarities with the network session.

This approach is based on the systematic management of all paid, voluntary, and personal rela-
tionship resources potentially available to a person or family in distress. The casemanager/
generalist's task is to identify, locate, mobilize, and organize the personal supports, volunteers,
and social service workers who can help to resolve a specific client's presenting problems.
This comprehensive system intervention is initiated at the earliest possible moment of the person's
career as service recipient.

In a system ideally suited for the casemanager/generalist approach, all categorical human
services (e.g. welfare, mental health, rehabilitation, public health) are delivered through
geographically based local human service centers. Incoming cases are assigned to casemanager/
generalists at or immediately following intake. The casemanager/generalist then rapidly constructs
a working group composed of members of the client's personal network, community volunteers, and
human service workers (the latter accessible through the local human service center).

The primary advantage of this approach is the prevention of ineffective service delivery or
harmful social disorder which otherwise develops so frequently when a multiple-problem family
interacts with the human service system. Experience has shown that substantial reconstruction of
a community's human service delivery system in accordance with the Curtis model is possible, but it
is an extremely difficult and demanding task. Experience suggests that such locally based, de-
centralized, multiple-category service centers will remain under constant pressure to revert to the
conventional separation of services into relatively autonomous categories of welfare, mental health,
children's services, rehabilitation, etc.

Curtis's work shows considerable sophistication in using network concepts, organizational system
theory, and epistemology. The team problem-solving method is based on a model of multiple and
reciprocal causality in the composition of events. The team assembles the key actors involved in
a problem situation for the purpose of hearing each actor's definition of the situation. By con-
tributing to the session's definition of the problem, each actor recognizes and takes responsibility
for the manner in which his relationships help to keep the problem active. Through discussions in
the session, the team identifies the multiple patterns of reciprocating causality, and the sites of
conflict. Strategies for change are based on identification of the particular causal patterns (pairs
of reciprocally-linked "causal chains") which are amenable to change, and whose changes are most
likely to produce beneficial change in the system.

In addition to his model of multiple, reciprocal causes acting through sites of conflict in a
social network, Curtis employs Mitchell's (1969) conception of a relationship as having several
simultaneous foci which change over time. Conflict arises when the individual does not differentiate
multiple role relationships in such multiplex relationships, leading to the development of mutually
exclusive or incompatible functions within the relationship.

The team's tasks include mediation and advocacy between the primary network and the service system,
or support for the network's independent efforts to get services. These tasks are based on the
definition of one site of conflict as the "intersection between the forces that give people local
relevance and the forces that make them dependent on decisions made outside the locality." Thus, a
healthy effort by an individual to take responsibility for his life can be thwarted by agency
decisions, or by inability to gain access to agency resources.

The team problem-solving session is intended to change "the inner conditions of the person's social network and the forces within a community that affect his network." Like the full-scale assembly, it includes negative as well as positive relationships, in order to "maximize the shift of relationship variables from negative to positive."

Curtis' strategies to achieve his design of a locally based caretaking system provide a good illustration of the practice of community network therapy (E, below). The task of a generalist in a community where state and local service workers work within the restrictions of specialty and agency interest, and where volunteers are isolated and/or subordinated to trivial service roles, is to "build relationships across specialty systems." This builds a community service network, allows for coordination of multiple services for multiply caused problems, and helps the generalist to identify service gaps and aid in service planning.

Curtis used free education courses provided by mental health professionals to draw together the three categories of caregivers (state workers, local workers, and local volunteers) essential to a community human service network. This voluntary mobilization led to the construction of neighborhood boards for community service organizations which established neighborhood service centers, and to the formation of problem-solving teams composed of state and local workers and community volunteers, who worked out of those centers.

The composition of these teams provided for the exchange of extensive wisdom, skills, and information. Volunteers provided essential information about local problems and local resources available through informal relationships. Their participation on teams provided an important local sanction for intervention into the social environment. These citizens were informed and responsible participants on the boards of the local community service organizations.

Curtis reorganized a state's area mental health agency into a network of local centers governed by local boards in five years. In evaluating his achievement, he claims that "The Taunton Area does care for more patients with no new state dollars and personnel. Centers in the communities intervene earlier and in more cost-effective ways. Coordination between categorical efforts for multiproblem families takes place. New resources have been found and new political constituencies developed" (Curtis 1976a).

Curtis (1980) has conducted a formal empirical study of the clinical efficacy of the team problem-solving method. In a clinical trial study, cases were randomly assigned from intake either to a problem-solving team or to a conventional mental health professional. Using six outcome measures, Curtis found both treatment approaches effective, with no difference in effectiveness between approaches. The cost of conventional care was five times the cost of team problem-solving (counting volunteer labor as "no cost").

Curtis (1976b) has noted the need for better theory and measurement of the structure, as well as affective and instrumental dynamics, of the social network. This would help network therapists to examine the consequences of combining primary with secondary relationships in an intervention, to define the boundaries of the network as "client," and to understand the interactions between the informal organization of the social network and the larger informal organization of the community.

D. Ecological System Intervention (Auersweld)

Continuing the trend toward greater emphasis on secondary relationships and on networks of relationships among organizations and people, this approach resembles the casemanager/generalist approach in its systematic analysis of relationships within and among personal support networks and service agency networks, its sensitivity to social service delivery disorders surrounding multiple-problem families, and its recognition of the need for reconstruction of service delivery systems. In contrast to the early preventative interventions of the casemanager/generalist, the work of the ecological systems intervener usually begins when the personal/agency network pathology is in full bloom. The task is to identify all the mutually contradictory and harmful interactions in primary and secondary helping relationships, then to intervene into this field, reconstructing the pattern of helping activities so that they can help and heal rather than stifle and destroy.

The "intersystems conference" technique (Auersweld 1971) is similar to the partial network assemblies (network session, team problem-solving) described above. Participants in the meeting include "available 'extended family,' pertinent friends, and representatives of each system in the community having an interest in the family or its members, such as teachers, welfare workers, clergymen, law enforcement officers, etc." As in the network session, the group develops a strategy for solving the problem, and each member contracts to carry out specific activities. As in the team problem-solving session, contributions from every member to the definition of the situation produce "a range of information . . . that does not allow for simple linear, cause-effect type of thinking."

Auersweld prescribes an ideal human service system similar to that envisioned by Curtis. He describes (Auersweld 1971) a health service constructed according to the ecological model "made up of people with a mix of skills who were not locked in time and space into an appointment system in an office or into a vertical organizational and departmental system that limited the field in which they could think and act." These staff were organized into teams who used ecological principles for assessment and resolution of problem situations.

Problems are often defined in ecological terms as involving power imbalance between family and social system, with agencies contributing to the imbalance. The ecological system intervener often resists destructive interventions from an agency involved with a family. Direct intervention is kept at a minimum to avoid constructing a new power-dependency relationship. The intervener usually encourages and coaches the family members themselves in their dealings with service agencies. Because manipulation of power within and among agencies is necessary, the network therapist who uses this approach should either occupy a position controlling organizational power, or construct collaborative relationships with managers for that purpose. A combination of clinical and political judgment is necessary to forecast whether a projected intervention will be helpful, harmfull, or simply ineffective.

Auersweld's holistic approach utilizes general system theory, communication theory, cybernetics, information theory, chronetics, kinesics, and studies of territoriality and interface phenomena. Although the concept of social network is not used systematically, the ecological system intervener and the network therapist obviously work in the same field. The ecological approach "stresses the organization of events in time and traces the movement of the developing infant-child-adolescent-adult-aged individual's degree of participation versus his isolation in relation to his family and to the flow of surrounding community life" (Auersweld 1968). "The entire ecological field—individual within family within wider social network--is the area under consideration" (Hoffman and Long 1969). The intervener studies the presenting problem/symptom in the context of all the systems surrounding the person. Analysis of the interlocking pattern of symptom, person, and environing systems leads to identification of "lacks and distortions in the transactional arena of each interface" between systems. This defines the changes and additions necessary for problem resolution.

The ecological system intervention literature is particularly valuable for the ethical implications of its analysis of harmful "helping" relationships. I have heard contemporary network analysts, who appear to perceive network therapy solely as a method for tightening linkages in a client's network, criticize network therapy for intensification of harmful power/dependency ties between poor or working-class clients and agencies of social control. In practice, I have found "loosening binds" to be as essential to network therapy as "strengthening bonds" (Speck and Attneave 1973). Nevertheless, this ethical issue is most appropriate to the relatively small network gathering, at which more than half of the participants may be service workers with secondary relationships to the client. The contemporary network therapist, having assessed the risk to client autonomy and dignity involved in the service relationships, will work to strengthen the primary sector of the client's network to counterbalance the intrusive power of the service system.

E.  Community Network Therapy (Attneave, Gatti and Coleman)

The practitioner of this approach also utilizes authority, the influential authority of the recognized community professional rather than the formal authority of the manager. In establishing his practice, the community network therapist looks for opportunities to conduct effective and visible public practice. Guided by a systematic approach to families, networks, institutions, and other social systems, the community network therapist utilizes his skills and community recognition/ reputation to weave a web of primary and secondary relationships which provide access to information and resources in the community. The objective of the community network therapist is to be generally recognized within the community as a helpful, skilled person with expert knowledge, who has access to many individuals and groups in the community, and who can find community resources when necessary for problem resolution. From this position, the practitioner's power as a therapist is enhanced by his power as resource broker. Community network therapy helps the network therapist to assimilate and integrate the sometimes bewildering variety of activity demanded by network therapy. Just as the conductor allows the assembled network to integrate his and the team's activities during a full-scale assembly, so does the community network therapist allow the community (expressed through responses and expectations from within his network of community ties) to guide his decisions on the conduct of his practice. The carefully constructed personal network of the community network therapist maximizes opportunities to practice the widest possible range of network therapies.

Currently, network therapy is practiced in a very small number of communities. Most aspiring network therapists will have to pioneer their craft in established community service systems. This involves gathering together interested community professionals and providing them with information, education, and training in the network therapies. Assuming that one is able to demonstrate one's

effectiveness as a clinician, the training group enhances one's community reputation/recognition, which are instrumental in weaving the community network therapist's web. Before embarking on the training group venture, one should become familiar with the literature on "networking" (B, above).

The practice of community network therapy requires at least an implicit awareness of network structure, and the operations of the community network therapist are intelligible within a network analytic frame of reference. Many of the concepts reviewed recently by Wellman (1980) can be applied directly to community network therapy. The community network therapist exploits his position in community networks as a resource to meet client service needs. The "broker" or resource mediator position is established through marginal or peripheral membership in multiple networks, with the therapist providing cross-linkage functions. Five years of practice in a community, occupying a variety of roles in several different settings, has given me an operational awareness of the individual's "flow through positions," and its implications for resource mediation.

## F. Network Construction (Cohen, V. Garrison, Hammer, Sokolovsky, Turkat)

Healing an existing network is not always possible. Sometimes a network is simply insufficient to meet a distressed client's needs. The network therapist should be able to help the client for whom treatment of the personal network is insufficient or not indicated. Through teaching and more active assistance, the network therapist can help the client to enlarge, construct, or reconstruct a personal network which has the capacity to nurture, to heal, and to challenge.

For the past five years, I have been running an outpatient psychotherapy group which is designed to provide a transitional network for clients with severe character disorder and/or major psychiatric illness. The development of day-to-day relationships among group members is encouraged, and these relationships are subject to discussion in group meetings and/or in individual sessions with the therapist. Membership in the group provides a relatively protected context in which the client learns healthier and less destructive strategies for managing personal relationships. The group meetings rely on both self-help and psychotherapy group process, and many of the techniques of the therapist (e.g. the naming of the group as Survival Tribe) come from the network therapies. The "tribe" provides a remarkably rich alternative support system for its members. Membership allows the client to withdraw from the pathogenic web of a malfunctioning personal network, and thereby to gain perspective on his network problems. Most clients go through a period of exclusive devotion to relationships within the "tribe," during which they learn public lessons about their own responsibility for destructiveness in their relations with others. Although membership in the group is clearly understood to last for the life of the group itself, most successful recoveries show a pattern of moving on into new, self-constructed networks. These new networks are constructed with the skills which have been developed, often painfully, through participation in Survival Tribe.

The December, 1978 issue of Schizophrenia Bulletin contains seven articles on social networks and schizophrenia, and is an excellent guide to the literature on network construction for this population. This approach is based on careful study of the personal networks of people with disabling psychiatric illness. The practitioner often will "enter" these small networks, by establishing a position in rooming house, halfway house, or social club. Using whatever authority or technology is accessible and useful for the task, the practitioner assists the disabled client in the construction and maintenance of a personal network which is durable, flexible, and resourceful enough to minimize the frequency and duration of hospitalization.

Mendel (1976) has developed another network construction approach which is claimed effective in averting hospitalization through the course of the schizophrenic illness. The client is linked in strongly to a trained support team, which assists the client in managing his transactions with the natural environment. Team membership is replaced regularly and systematically enough that the bond with the client is maintained over the years. Mendel criticizes network construction strategies which group together former patients for reinforcing deviant behavior. He claims that clients served by his "mainstreaming" approach do form new ties with "normal" people.

Garrison (1978) reports on a research study of the variety of naturally occurring personal networks among Puerto Rican women of rural origin living in the South Bronx. Further research on normal, inpatient, and outpatient populations from the same community led to the finding of a fairly consistent relationship between the degree of isolation implicit in the structure of naturally occurring types of networks and the degree of impairment in the central figures of these networks. Therapeutic intervention consisted of efforts to reconstruct patients' networks, transforming them from the more isolating to the less isolating models of personal network found to occur naturally in the community.

Although Cohen and Sokolovsky (1978) are appropriately cautious in generalizing from their research findings on the networks of schizophrenics living in single room occupancy hotels, their study offers a number of working hypotheses for network construction with this population. Larger network size and

greater connectedness (density or degree) may contribute to longer intervals between hospitalizations and/or briefer hospitalizations. Adaptive success appears to involve the person's capacity to form instrumental relationships; personal networks comprised primarily of dependent relationships with others are often associated with failure. Case examples demonstrate the adaptive utility of networks including several different clusters, each cluster having at least one member acting as a natural helper. When "burnout" or rehospitalization of a key figure renders one cluster inoperative as a source of support, other clusters are available to take up the slack.

The psychosocial rehabilitation center, with its historical origins as a voluntary association of ex-patient "members," is particularly helpful in providing its members with opportunities for network construction. Beard, Malamud, and Rossman (1978) studied the effects of outreach followup for members who stopped attending (or never followed through on original referral) was compared with no recruitment or followup for a control group of similar members. Followup was found to delay rehospitalization, and to reduce the duration of hospitalization.

The NIMH Community Support Program (Turner and Ten Hoor 1978), a demonstration program for the integration of social services to the psychiatrically disabled, has supported efforts for the construction and integration of networks with this population. Turkat (1980) has provided a number of suggestions for constructing the "devised" social network.

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*RESPONSE TO HAMMER*
*Peter D. Killworth (University of Cambridge)*
*H. Russell Bernard (University of Florida)*

In a recent note in this journal, Muriel Hammer discussed some of our findings about informant accuracy in social network data. In fact, we were unaware of her early work in this area (Hammer, Polgar and Salzinger 1969) which we have found very interesting. In turn, Hammer would not have known that our 1976 paper was only the first of (currently) five papers on informant accuracy: Killworth and Bernard 1976; Bernard and Killworth 1977; Killworth and Bernard 1979; Bernard, Killworth and Sailer 1980; Bernard, Killworth and Sailer (1980) -- hereafter referred to as A (Accuracy) I-V.

We feel that Hammer's note reveals many misconceptions about our work, as well as some incorrect statements. It is crucial to set the record straight, lest Hammer's statements provide readers with false comfort regarding informant accuracy in network data. In fact, we conclude after examining eight very different sets of data that <u>informants' reports of their communications bear little resemblance to their actual communications</u>.

We turn now to a consideration of the specific points raised by Hammer in her article:

1) Hammer says that our studies draw "unduly negative conclusions" about the relationship between behavioral and cognitive data. Her conclusions are "more complex and considerably less pessimistic" than ours. Her optimism is unfounded, given current data. Here are some findings:

a) People can recall or predict less than half the people they communicate with, even when the definitions involved have been tuned to make the informant as accurate as possible (AI, II).

b) If one wishes to discover 70% of a person's actual communication (and only be correct 95% of the time), one must ask for 24 people to be ranked by an informant. If the data are obtained in the form of scales, then the scale value "no communication" must be included to get even <u>this</u> low level of reliability (AII). Why ask informants for data at all, if you need this much data to get so little reliability?

c) The person an informant claims to have spoken to most is spoken to first, second, third, or fourth most often less than 50% of the time (AII). In other words, allowing an informant's report of his or her communication to be correct even when it is quite wrong, only produces accurate data less than 50% of the time -- and then, only on the one simple fact of who the informant claims to have talked to most!

d) Accuracy decreases (if that seems possible!) beyond the dyadic level. For example, any non-all-null behavioral triplet is reported incorrectly 76% of the time (AIII). The clique structure produced by cognitive data differs by 160% from the structure produced by equivalent behavioral data.

We simply fail to see how Hammer could find our conclusions unduly pessimistic. She presents no data to support her optimism, just a claim. In fact, the data in her excellent article with Polgar and Salzinger (1969) agree with our own and reinforce our findings. Quite simply, Hammer, Polgar and Salzinger conclude that cognition "does not constitute an adequate substitute for observation i.e., behavior " (p. 241).

2) Hammer claims that for most accuracy measures, "informant reports are significantly and strongly related to their observed social behavior." She quotes our correlations of 0.8 between informants' rankings and the probability of their speaking with those ranked as proof of this (AI). In so doing, she neglected to look at the graph of these probabilities. All but the very first of these probabilities lie below 0.5, so that the strong correlation of probability and rank is of no use at

all for predicting who someone actually spoke to. In fact, the probability decays abysmally slowly with rank (AII). There is still better than a 10% chance that an informant is communicating with his or her 30th ranked person. So, correlations are all very nice, but of no use whatever in finding out who someone talked to.

3) Hammer claims that the deviations of cognitive data from behavioral data are lawfully related to behavioral data, rather than being random. Her claim is based on an unpublished manuscript, which we would like very much to read, since none of our work has ever accounted for more than 30% of the variations in inaccuracy (AV), let alone predict who people really have spoken to, given the cognitive data.

Hammer continues in her article by suggesting that one might be able to correct for "bias" in cognitive data in some unspecified fashion. In AI, 66% of reported linkages between people either did not exist, or were not reported. This level of inaccuracy persists in all eight of our data sets. We fail to see how this can be called mere "bias." Furthermore, if informants fail to tell you who they talk to, it is difficult to imagine a rule which somehow "corrects" for this problem.

Note: we lay no blame for this problem on informants. Faulty data are the product of researchers' decisions to use faulty instruments.

f) Hammer claims that "estimates of the accuracy of informants' reports drawn from studies of locality based networks cannot simply be extended to issues of accuracy in non-locality based networks e.g. because of sampling errors, and the like ." We should make three points here. First, data gathered on a group of amateur radio operators (AII) attacked the non-local problem. The informants were spread out over an area of several thousand square miles. Second, because these data were gathered by an automatic, voice-triggered tape recorder, for a continuous period of four weeks, there was no sampling problem. Any and all communication was recorded. The level of inaccuracy was similar, by every measure, to the other data sets -- and this among a group of dedicated, semiprofessional communicators.

Third, what is at stake is not whether informants in this or that group are more accurate. The simple fact is that the instrument "who do you talk to?" (and all its variants) is, at best, dubious. Once an instrument has been cast into doubt, it must be tested before it can be trusted.

To sum up, Hammer believes that the situation is not so bleak as we have drawn it. We have offered a long series of analyses, on many different data sets, which demonstrates that the situation is at least as bleak as we have indicated. We realize that the implications of our research are severe; however, wishing the implications away, or claiming that cognitive data are a proxy for behavioral data, won't do.

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ROLES, POSITIONS, AND NETWORKS
Michael Mandel (Harvard University)
Christopher Winship (National Opinion Research Center and University of Chicago)

Readers of Douglas White's note in the Spring 1980 issue of Connections ("A Different Approach to Structural Equivalence") will be interested in the papers we have written and presented over the past several years. We have developed and implemented new variants of structural equivalence, together with associated algorithms, one of which (WP equivalence; see Mandel 1978, sections 2.3, 3.2, and Appendix D) is similar to the variant proposed in Douglas White's note. We have brought these ideas to bear on a variety of data analyses. Applications have included the identification of sets of individuals who share similar roles, comparison of the roles of individuals from different populations, the study of changes in roles over time, and examination of the internal structure of roles.

Papers include Mandel and Winship. "Roles, Positions, and Networks" (presented at the American Sociological Association annual meeting, 1979); Mandel, Roles and Networks: A Local Approach (1978 thesis, Harvard University); and Winship, "On Roles and Relations" (Department of Sociology, Harvard University, 1976).

Interested readers can obtain copies of these papers from Michael Mandel, RIAS, Alston Burr Hall, Harvard University, Cambridge, Mass. 02138, USA.

*THE EFFECTS OF URBANISM ON SOCIAL NETWORKS AND MENTAL HEALTH:  FINAL REPORT*

*Claude S. Fischer  (California-Berkeley)*

THE STUDY

The purpose of this project was to test ideas empirically about the effects of urban residence on an individual's personal relations and psychological well-being.  Popular conceptions and some social science theories state that the larger the community in which people live, the more socially isolated and psychologically disturbed they tend to be.  An alternative theory, proposed by the principal investigator, is that these alienating outcomes do not occur.  Yet urbanism does affect the kinds of relations people have and the "social worlds" they construct.  These worlds tend to become more specialized and homogeneous.  Other effects were also predicted, largely amounting to the conclusion that style of life, but not quality of life, is altered by urban residence.

To test these ideas, our research design called for interviewing about 1,000 people across fifty communities of varying degress of "urbanness," asking the respondents questions which would reveal the character of their personal ties and their psychological well-being.  Then we would analyze the data to isolate the independent contribution of community factors to both social relations and psychological states.

Our Procedure raised some methodological issues.  Primary among them was how to accurately and efficiently measure attributes of people's social networks in the standard mass survey interview.  This, we argued, was the critical element in providing valid data; failure to develop an accurate technique was the major drawback to earlier survey studies of social relations.  Consequently, Year 1 of the project was largely spent developing the network component of the interview instrument.  This involved consultations, informal interviews, a minisurvey of about twenty people, and a pilot survey of about eighty people (including twenty pairs of spouses interviewed to permit cross-checking of answers).  On the basis of the pilot survey, we developed a revised instrument.  We tested this in a second pilot survey and developed our final instrument.

We dealt with other methodological issues, as well:  developing brief measures of psychological well-being and of the spatial patterns of people's daily activities; a measure of urbanism that was closer to its theoretical meaning than are the arbitrary classifications typically used in survey studies; and a sampling procedure which allowed us to define meaningful sociological neighborhoods as sampling units, rather than using the blocks defined by the Census Bureau.  All these methodological considerations added twelve to eighteen months to the project; they also added quality to the product.

Eventually, we had a sample of fifty localities--census tracts and small towns--ranging from central San Francisco to the agricultural communities in Northern California, up to 150 miles away from San Francisco.  The sample was drawn by picking ten places in each of five strata:  center-city (San Francisco, Oakland, Sacramento), inner suburbs, outer suburbs, large towns, and small towns.  (For reasons explained in our reports, localities over forty percent black and towns under 2,500 in population were not sampled.)  We selected two neighborhoods on sociological bases, in each locality, and randomly interviewed a sample of people in each neighborhood.  In all, 1,500 households were approached; some were not eligible, and of the eligible, 1,050 interviews were completed between August 1977 and February 1978, for a "true" response rate of seventy-eight percent, roughly on par with other survey experience in the late 1970s.  In the end, we had the following data available:

The interview data covered their personal characteristics, attitudes, experience in the neighborhood and locality, psychological states, and of course, extensive data on their personal relations.

The interview data yielded a sample of 19,417 relations between the respondents and their (on the average) 18.5 associates.  For 4,179 of those relations, we have extensive data on both sides of the tie-- e.g., people's ages, labor force status, how they met, etc.

We also gathered quantitative and qualitative descriptions of each respondent's neighborhood, community, and city, from the census, our mail questionnaires, and our observations.

By the end of the project, November 30, 1979, all but small pieces of data-analysis were completed (these are being done on supplementary university funds), several papers were written, and almost all of

a book manuscript was complete. Work continues. Keeping our promise to the respondents, we sent to about 400 of them who had asked, a brief two-page report of the project results, as of October 15, 1979.

As to the basic question which initiated the project: the answers are, as always, complex. A crude summary would be that: Urbanism does not promote social isolation; it does seem to change the nature of social ties, discouraging contact with extended kin, local people, and church members, while encouring contact with friends of various kinds, who are more homogeneous, and more widely distributed geographica-lly. It does not seem to affect quality of intimacy of social ties. Similarly, urbanism has no appre-ciable net effect, positive or negative, on psychological well-being. Urbanism does seem to encourage, quite strongly, liberal attitudes on issues of social morality. It also seems to encourage sensitivity to other social groups in the environment, including vague distrust of people beyond (but not in) the neighborhood. All these findings--and, again, it must be stressed that, in fact, the results are much more complex, indeterminate, and qualified than this simplistic summary suggests--tend to support the conclusion that urbanism changes style of life but not quality of life, and tend not to support ideas of urban alienation and distress.

Product

A. Network Survey Instrument.

We consider the survey instrument which we developed--in particular, the parts of it which measure respondents' social networks--to be a major product of this study. Although there are a few extensive network instruments around, we believe that this one is a major advance--it is simultaneously efficient and comprehensive; its reliability and characteristics have been tested; it can be adapted for other uses. A few of our published reports dwell on the procedure, and they have been well received.

B. Network and Community Data Set.

Our complete data-set is now on deposit with the librarian at the Inter-University Consortium for Political and Social Research at the University of Michigan. (The Survey Research Center at Berkeley may also archive the data.) We are eager to have the data used; their richness have just barely been tapped.

The data are available in the form of three coordinate files: (1) a "respondent file," containing 1,050 records for our 1,050 respondents. Those records include all the material from the interview, some summary information about the respondents' networks, and a limited amount of data about their communities; (2) a "name file" of the 19,417 unique names provided by our respondents. Those 19,417 records include basic descriptive material about the named person, the respondent, and their relationship. For a subset of 4,179, there is still more data on the named person and the relationship. This file can be used either to study relations as the units of analysis (e.g., are same-sex friendships longer-lasting than opposite sex ones?; etc.), or to aggregate network information and attach it to the respondent file (e.g., to count the number of aunts a respondent named, or the percentage of friends a person named who lived more than an hours' drive away; etc.); (3) a "community file" of 100 neighborhoods describing the sample neigh-borhoods and communities, based on the various sources of data described above. This can be attached to either set of records we have just listed.

C. Book, Papers, and Works in Progress.

1. Book. A rough draft of a long manuscript reporting the basic analyses of the project is current-ly complete. It is tentatively titled, Private Worlds: Personal Networks in Town and City, by Claude S. Fischer. The book will have roughly the following outline:

1. Theoretical Introduction; 2. Description of the area studied and the respondents; 3. Descript-ion of our procedure and rationale; 4. Chapter showing that urbanism was not a cause of either social isolation or psychological distress; 5. Urbanism was a source of naming fewer extended kin, but had no net effect on nonkin; 6. Urbanism was differentially a cause of more friends, fewer fellow-congregants, and smaller percentage of neighbors; 7. Urbanism tended to encourage more same-sex, same-ethnicity, and same-religion nonkin ties; 8. Urbanism was complexly unrelated to the amount of social support networks provided; 9. Urbanism was complexly related to the structural characteristics of networks and they, in turn, to qualitative aspects of social ties; 10. Urbanism was a source, albeit weak, of more geographi-cally dispersed ties, especially for certain groups; 11. Urbanism was a source of slightly more involve-ment in ethnic, religious, and hobby subcultures (for those who cared much about religion or hobbies) and not much related to involvement in a work subculture; 12. Urbanism was a source of sensitivity to, annoy-ance with, and distrust of other social groups; 13. Urbanism was a source of more "relaxed" attitudes on topics of social morality; 14. Summary of findings on urbanism; summary on other important causal var-iables; conclusions and implications; Methodological Appendix; The Survey Instruments.

2. Papers.

a. Fischer, "The Contexts of Personal Relations: An Exploratory Network Analysis," I.U.R.D. Working Paper No. 281, 1978. This paper presents data from the frist two pilot surveys and analyzes educational differences in respondents' networks with an eye toward examining general theories of historical change in personal relations.

b. Jones (McCallister) and Fischer, "Studying Egocentric Networks by Mass Survey," I.U.R.D. Working Paper No. 284, 1978. This paper extensively discusses the logic behind our networks instrument, the variations we tested, and the empirical evaluations we made of the instrument.

c. Stueve and Fischer, "Social Networks and Older Women," paper presented to a workshop on older women, National Institute of Aging; also appears as I.U.R.D. Working Paper No. 292, 1978. This paper discusses the utility of network analysis for studying the elderly and also presents illustrative data from the survey.

d. McCallister and Fischer, "A Procedure For Surveying Personal Networks," Sociological Methods and Research 7 (November, 1978); 131-148; I.U.R.D. Reprint No. 160. This article summarizes some of the material in item (b) above and adds some data illustrating the advantages of the technique we present.

e. Fischer, "The Spatial Dimensions of Social Support: New Data from Northern California," Paper presented to the Metro Seminar Series, N.I.M.H., December, 1978; also appears as I.U.R.D. Working Paper No. 300, 1979. This paper analyzes the spatial distribution of people's social networks, what kinds of people draw associates from varying distances, and what kinds of assistance are provided by associates living various distances away from the individual.

f. Fischer and Phillips, "Who is Alone? Social Characteristics of People with Small Networks," to appear in Peplau and Perlman (eds.), Loneliness: A Sourcebook of Current Theory, Research, and Therapy, N.Y.: Wiley, 1981; appears also as I.U.R.D. Working Paper No. 310, 1979. This paper analyzes the social attributes of respondents who had small social circles and considers the connection between small networks and feelings of isolation.

g. Phillips, "Network Characteristics Related to the Well-Being of Normals: A Comparative Base," Paper presented to the Stress, Social Support, and Schizophrenia Conference, Burlington, Vermont, September, 1979. This paper reviews, for practitioners and researchers in the mental health area, prior approaches to the study of social support and mental health, and presents our method and illustrative data from our survey.

h. Phillips and Fischer, "Measuring Social Support Networks in General Populations," will appear in Dohrenwend and Dohrenwend, (eds.), Stressful Life Events, 1980. This paper combines elements of items (b) and (g), and adds further elaboration of the data, asking what aspects of social networks most affect feelings of happiness.

i. Fischer and Oliker, "Friendship, Gender, and the Life Cycle," I.U.R.D. Working Paper No. 318, 1980 (also to be submitted for publication). This reports and analyzes a finding that, in the early stages of the lifecycle—young marriage and parenthood—men had more friends that women did, but at later stages, women had more friends than men did.

j. Fischer, "Public and Private Worlds of City Life," Paper to be presented to the American Sociological Association, 1980; also appears as I.U.R.D. Working Paper No. 319, 1980. This paper summarizes a few key findings from the study, but focuses on showing that urbanism did not affect private relations, but did increase people's anxiety about the public sphere of life.

3. Work in Progress.

a. Fitzgerald and Fuller, "Errors Resulting from Refusals," (tentative title). Using unique data collected in our survey on the characteristics of households and people who refused to be interviewed, this paper evaluates current techniques survey researchers have for correcting for refusals and also estimates types of errors that result.

b. Fitzgerald and Fuller, "Fear of Crime and Refusals" (tentative title). This work will analyze the extent that neighborhood fear and reality of crime contribute to people's unwillingness to be interviewed.

c. Silverman and Gerson, "Classification of Places from Small Town to City" (tentative title). Analysis of what factors—aspects of the community and aspects of the individual—contribute to respondents' perceptions of their communities as large cities or small towns.

d. Silverman, Neighbors and Neighbors: A Study of Negotiated Claim. This dissertation will supplement Silverman's own interviews with comparable material from the project survey on neighboring.

e. Woodward, Planned Communities in Sweden and America, (tentative title). This dissertation will also use the project survey as supplemental material.

f. Baldassare, "Effects of Growth," (tentative title). Mark Baldassare of Columbia University has already obtained research funds to analyze our data with respect to the effects of rapid community growth on people's attitudes and social ties.

g. Oliker, Women's Friendships, (tentative title). This dissertation will draw heavily on the project survey for data comparing men's and women's friendships and the friendships of various categories of women.

h. Feld, "Models of Network Structure," (tentative title). Scott Feld of S.U.N.Y., Stony Brook, has been analyzing some of our more complex network data in his study ties.

i. Blau, "Structural Models of Social Relations," (tentative title). Peter Blau of S.U.N.Y., Albany and Columbia University has asked to use the data to test his theories on heterogeneity and homogeneity in social structure.

Other works may be in progress that we are not aware of, because the data are now being duplicated and access to it has been free. In addition, members of the project staff may, of course, do additional studies with the material.

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*APPLICATIONS OF NETWORK MODELS TO DRUG ABUSE TREATMENT PROGRAMS: A BRIEF REVIEW PAPER*
*Alvin W. Wolfe (University of South Florida, Tampa, Florida 33620)*

Formal network models can help drug abuse treatment programs to capitalize on what they have already known -- that the behavior of individuals is most influenced by those with whom they have most immediate and continuous contact, their family and their peers. Recognizing that family contacts and peer contacts can be the sources of stress leading to problems such as drug-dependence, the successful program will: (1) analyze an individual's network over time to discover the flow of support, advice, and feedback relevant to the drug problem; and will (2) gradually strengthen the supportive links which will help the individual achieve the change he or she desires. The important addition to group therapy or family therapy made by using a formal network model is the measurement of influences coming from various directions and, especially, the calculation of their effective interaction.

One network model focuses on the set of links surrounding a person, and simply describes that personal network set in terms of the characteristics of the links which comprise it (Wolfe 1970, Pattison 1976, Tolsdorf 1976). California psychiatrist E. Mansell Pattison (1976), for example, finds that neurotic and psychotic persons differ from normal persons in the number and type of social connections in their intimate networks. Whereas a normal person has 24 to 27 direct relationships, Pattison's neurotic patients have 10 to 12, and his psychotics only 7 such links. Furthermore, the neurotic patients and psychotic patients differ markedly in another network characteristic, the "connectedness" of the network set which surrounds each: the few persons functionally connected to a psychotic are highly connected to one another, being predominantly family members, while the persons in a network of neurotic patients are less densely connected to one another, abnormally less connected than are the sets of nonpatients. Using a similar network model, Christopher Tolsdorf (1976) found similar differences between psychiatric patients (all diagnosed as some variety of schizophrenic) and a control group without psychiatric problems. Tolsdorf found the psychiatric patients to have slightly smaller network sets, composed of more kinsmen but with a smaller proportion of multiplex (holistic) relationships, and more asymmetry in those relationships such that patients gave much less help (advice, support, feedback) to others than they received.

Data such as these are rare for drug reusers, but what findings there are suggest that addicts would have networks much like those of psychiatric patients.

Most recently, Pattison, Llamas, and Hurd (1979) published some data comparing networks of "normals" (as we who are neither patients nor addicts are called) with networks of various kinds of troubled persons showing heroin addicts and alcoholics to have networks skewed in ways similar to those of psychotics. Specifically, the greatest difference is in their relations with relatives outside the nuclear family and with coworkers. In both these important sectors heroin addicts are more restricted than are alcoholics. Both heroin addicts and active alcoholics have friends, however, even though they are slightly fewer in number than the friends of normals or of recovered alcoholics. Recovered alcoholics, incidentally, are virtually indistinguishable from normals in all respects.

Tolsdorf's summary concerning psychiatric patients seems relevant to the person with addiction problems, and is for that reason quoted at length:

> In view of the systematic quality of social networks, the issues described above take on significance in the way in which they interact. . . . Specifically, the psychiatric subjects experienced some significant life stress with which they attempted to cope (individually). When this strategy failed, they chose not to mobilize their networks, relying instead on their own resources, which had already been shown to be inadequate. This resulted in more failures, higher anxiety, a drop in performance and self-esteem, followed eventually by a psychotic episode (Tolsdorf 1976: 415).

How is such information to be used to help the substance abuser who wishes to change? One thing to do for the person with stresses is what Pattison calls "system therapy": Instead of intervening in the internal psychological structure of the individual, the system therapist intervenes in the network set surrounding the individual. Tightening and loosening the affective and instrumental linkages that exist in the network opens up different options for behavior, and the client will, consequently, behave differently.

Using a network model, a drug rehabilitation program could intentionally help a person strengthen those portions of his/her network that inhibit drug dependent behavior and at the same time weaken those portions that tend to foster such behavior. In Lynn, Massachusetts, Project Cope (Callan, Garrison, and Zerger 1975) uses Network Sessions in just such a way, modelling their approach after that of Speck and Attneave(1973).

The goals of Project Cope include helping residents to become drug free by helping them to develop a "non-junkie" identity while experiencing drug-free living and then providing the opportunity through network techniques to reenter society with the tools necessary to deal with life's problems. The network techniques involve the friends and kinsmen of clients in programmatic decision-making through participation in network sessions at various stages in the treatment.

Two more specific network models can be used to help achieve the aims outlined above.

One, a flow-network model, is useful when one wants to, and is able to, measure a quantity of something (support, information, affect) flowing through the network. Using appropriate mathematical algorithms (Ford and Fulkerson 1962); Phillips and Dessouky 1977; Zachary 1975; White 1973) one can identify critical paths which limit the quantity reaching a particular point of interest, say, a client. Objective review of the results of such analysis on the part of a client counselled by a "network broker" might help the client to develop strategies more satisfactory to his aims.

Another formal network model that might be helpful is one which permits the location of all points, relative to one another, in multidimensional space. There are a variety of specific models of this kind, leading to different kinds of structural statements. Is a network radial (poorly connected, like a "tree") or is it interlocking (like a web) (Laumann 1973). A variety of useful measures have been devised for the common sense notion of centrality (Freeman 1977). Is the "centrality index" of a given person, say a client, high or is it low (in which case he would be more dependent on his network set than the other members of it are on him) (Emerson 1973). What is the "span" of a person's network set? If the set has wide span, then perhaps the behavioral options are greater for the subject person (Kapferer 1969; Granovetter 1973). How are the various links that make up a person's network themselves connected? Are they positively connected, such that transactions across one link facilitate exchanges across another, or are they negatively connected, such that transactions across one inhibit transactions across an adjacent link (Emerson 1973). Finally, location may be conceptualized as social distances between a number of actors, social distances operationalized as any of a variety of directed relations, such as liking, frequency of communication, perceived similarity, etc. (Burt 1976; Killworth and Bernard 1974). Again, review of the results of such analysis on the part of a client counselled by a network broker might help the client develop strategies more satisfactory to his aims.

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*NETWORKS REVISITED*
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*Excerpted by permission from RAIN: Journal of Appropriate Technology 4 (2), November 1979.*

Well, you see, back in the 1970s there were these people -- we called them information freaks, which I can only say now like I say "hippie." They ran around from group to group, appearing at meetings, conferences and gatherings, pollinating social change through exchanging rare information. You could recognize them easily by their ritualistic behavior of exchanging names and addresses, fugitive xerox copies of "new and interesting information."

"New and Interesting" was about as concrete a definition as was needed then. One hardly had to know what a document said about, say, solar or wind energy. Just that there was anything about it all made it newsworthy, and the bearer of the information and automatic member of one's network (or as Kurt Vonnegut called it, one's Karass).

We tried often to set up the *Net*. It was assumed you could do it then. RAIN itself, in fact, grew out of a proposal to HEW for development of "an environmental communications network in the Northwest." There was an assumption that the "net" could be established because commonness was easy to identify, as it was in the sixties: standing on an interstate, with heart leaping as a VW bus came along, I mean you just knew your karass was about to pick you up.

The scarcity of information, say about appropriate technology, facilitated network building. When an underground activity becomes a part of the public marketplace, as a.t. has, *the* network becomes many networks; the very success of communicating the ideas and information produces a social fracture.

Mary Darnovsky, in an article entitled: "Is Networking Not Working in the Anti-Nuclear Movement?" (*Journal of Community Communication*) makes the point that often a network is actually just a "pre-organization structure"; that eventually a network is formalized into what resembles one of many models of organizations, i.e., federation, coalition, alliance, etc.

Formation of, or just recognition of networks can, in this context, be a simple way of reaching for further collaboration without encountering problems of responsibilities and rights of either individuals or organizations that arise in more formal situations.

Peter and Trudy Johnson-Lenz, in an unpublished manuscript entitled *Speculations on Facilitating Network Structures: Balancing Social Coherence and Individual Liberty*, have done an admirable job of discussing the use of the term as applied to social change organizations, social network analysis, and telecommunications.

At one point they describe network facilitation on the individual level as a response to *"the need to provide people with access to information about alternative ways of living as well as access to people with whom they can link up to learn, share, work, solve problems, and support each other. The point is not necessarily to increase the sheer number of connections between people, but rather to make available a much wider range of potential associations to ensure a higher likelihood of developing the few actual associations which are vital and which meet perceived needs."*

*Speculations on Facilitating Network Structures: Balancing Social Coherence and Individual Liberty.*
    *August 1979, $3.00. Peter and Trudy Johnson-Lenz, 695 Fifth Street, Lake Oswego, OR 97034.*

    This paper explores the values of groups interested in alternative social structures and shows how methods and concepts from social network analysis and cybernetics can be used to describe and facilitate the development of desirable network structures.

*"Networking." The Journal of Community Communications. Village Design, P.O. Box 996, Berkeley, CA 94701.*

    The journal is in general a good source of information, and this special issue (Vol. III, No. 3, September 1979) has several good articles on networking referred to elsewhere in this article.

*"Tensed Networks: Balancing and Focusing Network Dynamics," by Anthony Judge, in Transnational Associations Journal, No. 78, pp. 480-5. Reprint available from Union of International Associations, 1 Rue Aux Laines, Brussels, Belgium 1000.*

    Anthony Judge is an astute interpreter of social network analysis theories as they relate to cooperative problem-solving. The massive Yearbook of World Problems and Human Potential (published by the Union of International Associations and edited by Judge) describes world organizations that need solving. In "Tensed Networks," Judge describes what he calls "flabby"

networks, ones that do not seek unlike elements (people), and using classic Bucky Fuller concepts he supports the notion that balance in network development is dependent on there being both compatibility (tension which holds the network together) and confrontation (compression) which moves network building forward.

*"The Basic Paradigm of a Future Socio-Cultural System," by Virginia H. Hine, Journal of Community Communications, Vol. III, No. 3, September 1979.*

A summary of research done along with anthropologist Luther P. Gerlach on "movements." Hine importantly points out that non-vertical organizational structures (non-hierarchical and non-bureaucratic), such as networks are not only growing within "movements" on the grass-roots ends of things but that also networks of individuals and organizations that cross many boundaries in fact constitute a power structure that is eclipsing the power of nation-states. "The rise of a managerial elite provides a linking mechanism. Networks of personal ties are formed as corporate executives move from one hierarchy to another in their ascent to positions of global influence."

## Self-Help Networks

*Self-help is a popular buzzword, along with other seventies "self words" like self-education, self-reliance, self-determination, etc. (looking up "self-" in the dictionary is an interesting parlor game). It is an important yet flexible concept.*

*In traditional human services the old adage about teaching a person to fish rather than giving him a fish illustrates the basic concept of self-help; a distinction important in these post-Proposition 13 days, between services that perpetuate a trapped class of clients of public services and programs and educational processes that facilitate persons helping themselves.*

*A well-known kind of traditional self-help group is Alcoholics Anonymous, with some 40,000 chapters around the country, which operate on the premise of the benefits of mutual support in problem solving.*

*It has been estimated that self-help organizations (and in this is included food co-ops, service exchanges, and other models as presented in the New York Self-Help Handbook) are forming at the rate of five a day.*

*It is interesting to watch traditional concepts of self-help such as AA merge with other, newer forms. I once worked with a Parents Anonymous group (child abusers) that grew in its concerns of mutual benefit from solving common problems to forming a food buying club, a skill exchange and a weekly potluck.*

*National Self-Help Clearinghouse, Graduate School and University Center, City University of New York, 33 West 42nd Street, Room 1227, New York, NY 10036.*

Are publishing a directory to self-help groups around the country.

*Natural Helping Networks, Diane L. Pancoast, Alice H. Collins. November 1978, 190 pp, $5.00, from: National Association of Social Workers, 1425 H Street N.W., Suite 600, Washington, DC 20005.*

Natural helping networks is a concept gaining some adherents in the human services sector, which utilizes the concepts being developed by social network analysts about the relations between individuals and collections of individuals in a community, and focuses attention on how to support the natural networks, and natural networkers, in a community.

For example, in Santa Fe a human service agency provided information and some training to bartenders, barbers, grocery store owners, etc., increasing their capacity to help individuals in locating resources in the community, or facilitating interaction with government processes.

*Networks for Helping: Illustrations from Research and Practice, Regional Research Institute, Natural Helping Network Project, Portland State University, P.O. Box 751, Portland, OR 97207.*

Proceedings from a conference, November 1-2, 1978, with papers on theory and practice.

*New York Self-Help Handbook, Karin Carlson, Project Director, 1977, $5.70, from: Citizens Committee for New York City, Inc., 630 Fifth Ave., New York, NY 10020.*

Specifically a directory to resources in New York City, but generally a good overview of types of community self-help projects.

*Other Models*

There are many examples of networks where there is a self-conscious (gad, another "self" word) attempt to focus on the **process** of individual and collective network building and the principles of information sharing, and people to people and/or people to resource connections.

*"Networking in San Francisco,"* by Luba Zarsky and Village Design (in The Journal of Community Communication *issue on networking*), is a summary of some research done by Village Design of communication patterns of community-based organizations in San Francisco, with descriptions of several formalized networks such as Briarpatch, Peoples Food System and the Community Coalition.

*Linkage* (c/o Robert Theobald, P.O. Box 2240, Wickenberg, AZ 85358) is a network convened by Theobald (as he did in 1971 with what I always called "the Theobald Net"), designed to be a formalized "invisible college." Linkage is now developing a kind of employment/consulting mechanism for its members.

*The Open Network* (P.O. Box 18666, Denver, CO 80218) charges members $10/year, providing them with access to the **Network News** (where members may post announcements up to 100 words long), a library, and a computer for storing and retrieving network information.

*Participation Systems Inc.* (43 Myrtle, Winchester, MA 01890) is developing a series of networks through providing specific services to members. Calling all of the networks, "politechs," the one now operating is Legitech, an information exchange among state legislative assembly research staff members, who use EIES (Electronic Information Exchange System), a computer conferencing system, to share information through a software program developed to handle inquiries and responses that circulate between members.

*Self Determination* (P.O. Box 126, Santa Clara, CA 95052) is, as they describe it, a "personal/political network." They are presently involved in publishing "Nex-us," a statewide resource directory listing individual and organizational skills, interests and resources. They publish a quarterly journal and develop "ad-hoc" networks and coalitions around critical public issues (currently, nuclear power).

The potential of the communication technology for revolutionizing an individual's capability through more, but specifically channeled information, by changing our working styles, and through facilitating a rich fabric of potential connections between persons and organizations, is what I will share in a subsequent article.

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# SPECIAL JOURNAL ISSUES

Abstracts from SOCIAL NETWORKS 2, No. 2, 1980

BOYD, John Paul (California, Irvine) "The Universal Semigroup of Relations."

Semigroup theory is shown to be a very flexible and appropriate language for the study of social relations. Some of the difficulties with the application of the Lorrain and White (1971) approach to social relations are discussed. It is pointed out that the 'universal' semigroup of relations is often more suitable for studying relations than the more commonly used 'semigroup of relations'. Several standard examples and techniques are presented for the study of semigroups. The concept of structural equivalence is generalized to structural similarity modulo a congruence relation. A Galois connection, between the set of relations on the social relations themselves and the lattice of congruences on the universal semigroup, is applied to the evolution of kinship systems.

FRANK, Ove (Lund) and Frank HARARY (Michigan) "Balance in Stochastic Signed Graphs."

Signed graphs provide models for investigating balance in connection with various kinds of social relations. Since empirical social networks always involve uncertainty because of errors due to measurement, imperfect observation or sampling, it is desirable to incorporate uncertainty into signed graph models. We introduce a stochastic signed graph and investigate the properties of some indices of balance involving triads. In particular we consider the balance properties of a graph which is randomly signed and of one which has been randomly sampled from a large population graph.

FREEMAN, Linton C. (California, Irvine), Douglas ROEDER (Stanford) and Robert R. MULHOLLAND (California, Irvine) "Centrality in Social Networks: II. Experimental Results."

Three competing hypotheses about structural centrality are explored by means of a replication of the early MIT experiments on communication structure and group problem-solving. It is shown that although two of the three kinds of measures of centrality have a demonstrable effect on individual responses and group processes, the classic measure of centrality based on distance is unrelated to any experimental variable. A suggestion is made that the positive results provided by distance-based centrality in earlier experiments is an artifact of the particular structures chosen for experimentation.

HAMMER, Muriel (New York State Psychiatric Institute) "Predictability of Social Connections Over Time."

A developed theory of social networks would potentially provide predictive and explanatory models for social processes at the most general level. The paper contributes to such a theory by elaborating one basic proposition: that social connections attract each other as a regular function of network parameters such as 'structural strength' (number of common links) and 'distance' (length of minimal path of linkage). The proposition is tested on longitudinal data from three locality-based networks.

RUNGER, George and Stanley WASSERMAN (Minnesota) "Longitudinal Analysis of Friendship Networks."

This note discusses and demonstrates methods, both exploratory and confirmatory, for analysing data from friendship networks collected over time. The focus is on stochastic models for dyadic interaction designed to quantify the structural effect of reciprocity on arc changes. The networks studies were previously analysed by Hallinan (Social Networks 1: 193-210) who was concerned with stability of dyadic choices and the direction of change of asymmetric dyads to either mutual or null dyads. These aspects of the networks are really of secondary importance to the effect of reciprocated choices on the probabilities of dyadic change. Measures of this 'reciprocity effect' are presented, and comments on the rationale for continuous-time Markov chains as models for networks are given.

*VAN POUKE, Willy (State University of Ghent) "Network Constraints on Social Action: Preliminaries for a Network Theory."*

The network approach to social reality lacks a theoretical body that backs up the assumption of the working of structural rules. This contribution is an attempt toward investigation of the possibility of a theory of the effects of network properties on social action. The structure and effects of social networks vary along with the aims put forward in the relations of which they are composed. Considering those aims, three different sorts of networks can be distinguished--sentiment-, interest-, and power-networks-- involving distinct action logics. When the nature of the ties is known, predictions about the structure of the resulting social networks, type of social control and type of exchange taking place within them, can be made.

Abstracts from JOURNAL OF GRAPH THEORY 4, No. 1, Spring 1980

*ACHARYA, B. Devadas (Mehta Research Institute) "Spectral Criterion for Cycle Balance in Networks."*

A network is cycle balanced if the product of the weights (nonzero real numbers) of the lines of every cycle in it is positive. In this paper, we prove that a network D is cycle balanced if and only if its adjacency matrix is isospectral with its nonnegative counterpart. Consequent to this theorem is an analogous criterion for structural balance in sigraphs (abbreviation for "signed graphs") as also for cycle balance in signed digraphs. These criteria establish in a natural way a wide scope for cospectrality considerations in the classes of signed digraphs and sigraphs.

*BANGE, David W. (Wisconsin-La Crosse), Anthony E. BARKAUSKAS (Wisconsin-La Crosse) and Peter J. SLATER (Saudia Laboratories) "Conservative Graphs."*

A graph G with q edges is defined to be conservative if the edges of G can be oriented and distinctly numbered with the integers $1,2,\ldots,q$ so that at each vertex the sum of the numbers on the inwardly directed edges equals that on the outwardly directed edges. Several classes of graphs, including $K_n$, for $n \geqslant 4$, and $K_{2n,2m}$, for $n,m \geqslant 2$, are shown to be conservative. It is proven that the dual of a planar graceful graph is conservative, and that the converse of this result is false.

*BAREFOOT, Curtiss A. and R. C. ENTRINGER (New Mexico) "Extremal Maximal Uniquely Hamiltonian Graphs."*

Let G be a graph of order n with exactly one Hamiltonian cycle and suppose that G is maximal with respect to this property. We determine the minimum number of edges G can have.

*BRUALDI, Richard A. (Wisconsin), Frank HARARY (Michigan) and Zevi MILLER (Michigan) "Bigraphs versus Digraphs via Matrices."*

It was observed by Dulmage and Mendelsohn in their work on matrix reducibility that there is a one-to-one correspondence between bigraphs and digraphs determined by the utilization of the adjacency matrix. In this semiexpository paper we explore the interaction between this correspondence and a theory of matrix decomposability that is developed in several different articles. These results include: (a) a character- ization of those bipartite graphs that can be labeled so that the resulting digraph is symmetric; (b) a criterion for the bigraph of a symmetric digraph to be connected; (c) a necessary and sufficient condition for a square binary matrix to be fully indecomposable in terms of its associated bigraph, and (d) matrix criteria for a digraph to be strongly, unilaterally, or weakly connected. We close with an unsolved ex- ternal problem on the number of components of the bigraph of various orientations of a given graph. This leads to new amusing characterizations of trees and bigraphs.

*HORAK, P. (Technical University, Bratislava) and J. SIRAN (University J.A. Komensky) "Note on a New Coloring Number of a Graph."*

The distance coloring number $X_d(G)$ of a graph G is the minimum number n such that every vertex of G can be assigned a natural number $m < n$ and no two vertices at distance i are both assigned i. It is proved that for any natural number n there exists a graph G with $X_d(G)=n$.

JACKSON, *Brad (Pennsylvania State) "Triangular Embeddings of K((i-2)n,n,...,n)"*

For complete i-partite graphs of the form $K(n_1,n,n,...,n)$ the largest value of $n_1$ that allows the graph to be triangularly-embedded into a surface is $(i-2)n$. In this paper the author constructs triangular embeddings into surfaces of some complete partite graphs of the form $K((i-2)n,n,...,n)$. The embeddings are exhibited using embedding schemes but the surfaces into which $K((i-2)n,n,...,n)$ are triangularly embedded can be seen to be particularly nice branched covers of a surface into which $K(i-2,1,1,...,1)$ is triangularly embedded.

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KELMANS, *A.K. (Institute of Control Sciences) "Concept of a Vertex in a Matroid and 3-Connected Graphs."*

The concept of a matroid vertex is introduced. The vertices of a matroid of a 3-connected graph are in one-to-one correspondence with vertices of the graph. Thence directly follows Whitney's theorem that cyclic isomorphism of 3-connected graphs implies isomorphism. The concept of a vertex of a matroid leads to an equally simple proof of Whitney's theorem on the unique embedding of a 3-connected planar graph in the sphere. It also leads to a number of new facts about 3-connected graphs. Thus, consideration of a vertex in a matroid that is the dual of the matroid of a graph leads to a natural concept of a nonseparating cycle of a graph. Whitney's theorem on cyclic isomorphism can be strengthened (even if the nonseparating cycles of a graph are considered, the theorem is found to work) and a new criterion for planarity of 3-connected graphs is obtained (in terms of nonseparating cycles).

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MULDER, *Martyn (Vrije Universiteit) "n-Cubes and Median Graphs."*

The n-cube is characterized as a connected regular graph in which for any three vertices u,v,and w there is a unique vertex that lies simultaneously on a shortest (u,v)-path, a shortest (v,w)-path, and a shortest (w,u)-path.

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PROSKUROWSKI, *Andrzej (Oregon) "Centers of Maximal Outerplanar Graphs."*

The center of a graph is defined to be the subgraph induced by the set of vertices that have minimum eccentricities (i.e., minimum distance to the most distant vertices). It is shown that only seven graphs can be centers of maximal outerplanar graphs.

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SIMONCINI, *Luca (Institute di Elaborazione della Informazione) and Herbert Taylor (Southern California) "Subgraphs Smaller than the Girth."*

For graphs A,B, let $\binom{A}{B}$ denote the number of subsets of nodes of A for which the induced subgraph is B. If G and H both have girth > k, and if $\binom{G}{T} = \binom{H}{T}$ for every k-node tree T, then for every k-node forest F, $\binom{G}{F} = \binom{H}{F}$. Say the spread of a tree is the number of nodes in a longest path. If G is regular of degree d, on n nodes, with girth > k, and if F is a forest of total spread $\leq$ k, then the value of $\binom{G}{F}$ depends only on n and d.

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STRAIGHT, *J. Joseph (SUNY-Fredonia) "Note on the Cochromatic Number of Several Surfaces."*

The cochromatic number of a graph G, denoted by $z(G)$, is the minimum number of subsets into which the vertex set of G can be partitioned so that each subset induces an empty or a complete subgraph of G. In an earlier work, the author considered the problem of determining $z(S)$, the maximum cochromatic number among all graphs that embed in a surface S. The value of $z(S)$ was found for the sphere, the Klein bottle, and for the nonorientable surface of genus 4. In this note, some recent results of Albertson and Hutchinson are used to determine the cochromatic numbers of the projective plane and the nonorientable surface of genus 3. These results lend further evidence to support the conjecture that $z(S)$ is equal to the maximum n for which the graph $G_n = K_1 U K_2 U...U K_n$ embeds in S.

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TRUEMPER, *K. (Texas at Dallas) "On Whitney's 2-Isomorphism Theorem for Graphs."*

Let G and H be 2-connected 2-isomorphic graphs with n nodes. Whitney's 2-isomorphism theorem states that G may be transformed to a graph $G^*$ isomorphic to H by repeated application of a simple operation, which we term "switching". We present a proof of Whitney's theorem that is much shorter than the original one, using a graph decomposition by Tutte. The proof also established a surprisingly small upper bound, namely n-2, on the minimal number of switchings required to derive $G^*$ from G. The bound is sharp in the sense that for any integer N there exist graphs G and H with n $\geq$ N nodes for which the minimal number of switchings is n-2.

Abstracts from JOURNAL OF GRAPH THEORY 4, No. 2, Summer 1980.

AVERY, Peter (Keele) "Condition for a Tournament Score Sequence to be Simple."

The condition is given for a (tournament) score sequence to belong to exactly one tournament.

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BAUER, Douglas (Stevens Institute of Technology) "Line Graphical Degree Sequences."

A degree sequence $\pi = (d_1, d_2, \ldots, d_p)$, with $d_1 \geqslant d_2 \geqslant \ldots \geqslant d_p$, is line graphical if it is realized by the line graph of some graph. Degree sequences with line-graphical realizations are characterized for the cases $d_1 = p-1$, $d_1 = p-2$, $d_1 \leqslant 3$, and $d_1 = d_p$. It is also shown that if a degree sequence with $d_1 = p-1$ is line graphical, it is uniquely line graphical. It follows that with possible one exception each line-graphical realization of an arbitrary degree sequence must have either $C_5$, $2K_1 + K_2$, $K_1 + 2K_2$, or $3K_1$ as an induced subgraph.

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BEINEKE, Lowell W. and Richard D. RINGEISEN (Indiana-Purdue University at Fort Wayne) "On the Crossing Numbers of Products of Cycles and Graphs of Order Four."

The main results are that the crossing number of the product $C_4 \times C_n$ is $2n$ for $n \geqslant 4$ and that of the product $K_4 \times C_n$ is $3n$ for $n \geqslant 3$. These are extensions of an earlier result giving the crossing number of $C_3 \times C_n$ as $n$ for $n \geqslant 3$.

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CAMERON, Peter J. (Merton College) "A Note on Generalized Line Graphs."

Whitney's theorem on line graphs is extended to the class of generalized line graphs defined by Hoffman.

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CHARTRAND, Gary (Western Michigan), Ronald J. GOULD (Emory) and Albert D. POLIMENI (SUNY-Fredonia) "On Ramsey Numbers of Forests Versus Nearly Complete Graphs."

A formula is presented for the ramsey number of any forest of order at least 3 versus any graph G of order $n \geqslant 4$ having clique number $n-1$. In particular, if T is a tree of order $m \geqslant 3$, then $r(T,G) = 1 + (m-1)(n-2)$.

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DELORME, Charles (Paris-Sud) "Two Sets of Graceful Graphs."

We give graceful numberings to the following graphs: (a) the union of $nK_4$ having one edge in common, in other words the join of $K_2$ and the union of n disjoint $K_2$ and (b) the union of $nC_4$ having one edge in common, in other words the product of $K_2$ and $K_{1,n}$ with $n + 1$ not a multiple of 4.

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DONALD, Alan (Queen's) "An Upper Bound for the Path Number of a Graph."

The path number of a graph G, denoted $p(G)$, is the minimum number of edge-disjoint paths covering the edges of G. Lovász has proved that if G has u odd vertices and g even vertices, the $p(G) \leqslant 1/2u + g - 1 \leqslant n-1$, where n is the total number of vertices of G. This paper clears up an error in Lovász's proof of the above result and uses an extension of his construction to show that $p(G) \leqslant 1/2u + [3/4g] \leqslant [3/4n]$.

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GOLDSMITH, Donald L. (Western Michigan), Bennet MANUEL (Colorado State) and Vance FABER (Colorado) "Separation of Graphs into Three Components by the Removal of Edges."

Several ways to separate a connected graph into three components by the removal of edges are discussed. Graphical parameters that count the number of edges removed are introduced and the relations between these parameters are given.

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GROSS, Jonathan L. (Columbia) and Samuel J. LOMONACO, Jr. (SUNY) "A Determination of the Toroidal K-Metacyclic Groups."

Kronecker studied a class of groups (p,p-1,r), whose commutator subgroups are prime cyclic of order p, and whose commutator quotient groups are cyclic of order p-1. These are now commonly called the K-meta-cyclic groups. It follows from the classical work of Maschke that none of the K-metacyclic groups except (3,2,2) has a planar Cayley graph. It is proved here that only for p=5 and p=7 is a K-metacyclic group (p,p-1,r) toroidal. To achieve this result, this paper develops a methodology for using Proulx's classi-fication of toroidal groups by presentation to determine whether an explicitly given group is toroidal.

HALL, J.I. (Michigan State) "Locally Petersen Graphs."

A graph Γ is locally Petersen if, for each point t of Γ , the graph induced by Γ on all points adjacent to t is isomorphic to the Petersen graph. We prove that there are exactly three isomorphism classes of connected, locally Petersen graphs and further characterize these graphs by certain of their parameters.

READ, R.C. and N.C. WORMALD (Waterloo) "Number of Labeled 4-Regular Graphs."

Several operations on 4-regular graphs and pseudographs are analyzed and equations are obtained relating the numbers of these graphs on given numbers of labeled points. These equations are used recursively to find the numbers of 4-regular graphs on up to 13 labeled points.

SOZAŃSKI, Tadeusz (Jagellonian University) "Enumeration of Weak Isomorphism Classes of Signed Graphs."

A signed graph is a graph in which each line has a plus or minus sign. Two signed graphs are said to be weakly isomorphic if their underlying graphs are isomorphic through a mapping under which signs of of cycles are preserved, the sign of a cycle being the product of the signs of its lines. Some enumeration problems implied by such a definition, including the problem of self-dual configurations, are solved here for complete signed graphs by methods of linear algebra over the two-element field. It is also shown that weak isomorphism classes of complete signed graphs are equal in number to other configurations: unlabeled even graphs, two-graphs and switching classes.

Abstracts from NETWORKS, AN INTERNATIONAL JOURNAL 10, No. 1, Spring 1980.

ANEJA, Y.P. and K.P.K. NAIR (New Brunswick) "Maximal Expected Flow in a Network Subject to Arc Failures."

In a network subject to arc failures, each chain has a probability of failure. Therefore the maximal flow in the network is a random variable. The problem considered here is that of maximizing the expected flow. An arc-chain formulation of the problem, and an algorithm for computing an optimal solution are provided. The algorithm involves a column generation technique, and a constrained chain in the network provides a desired column at each step of the simplex algorithm. The technique presented here is an extension of that of Ford and Fulkerson. The algorithm is validated, and a geometric interpretation is included.

ERDÖS, Paul (Hungarian Academy of Sciences), Siemion FAJTIOWICZ (Houston) and Alan J. HOFFMAN (I.B.M.) "Maximum Degree in Graphs of Diameter 2."

It is well known that there are at most four Moore graphs of diameter 2, i.e., graphs of diameter 2, maximum degree d, and $d^2 + 1$ vertices. The purpose of this paper is to prove that with the exception of $C_4$, there are no graphs of diameter 2, of maximum degree d, and with $d^2$ vertices.

FARLEY, Arthur M. (Oregon) "Minimum-Time Line Broadcast Networks."

Broadcasting refers to the process of message dissemination in a communication network whereby a message, originated by one member, becomes know to all members. Line broadcasting assumes that members may "switch-through" any number of calls during a time unit. An algorithm is presented which produces a calling schedule completing line broadcasting in minimum time from any member of any tree. A discussion of three types of broadcasting and their associated munimum time networks is included.

MASCH, Victor V. (Princeton) "The Cyclic Method of Solving the Transshipment Problem with an Additional Linear Constraint."

The "cyclic" method proposed in this paper provides a more efficient computational scheme than currently known adaptations of the simplex method for solving the transshipment problem with an additional linear constraint. Computer codes for the pure network problem can be easily altered to accommodate the cyclic method. Even more important, the cyclic method produces integral solutions at all iterations (except, possibly, the last one); this property may prove valuable in integer programming.

PETERSON, br.   :   Washington "A        Procedure for Transportation Network Optimization."

Many transportation network optimization problems use conservation of flow equations as constraints when a network must accommodate set flows between nodes. A different set of equations, called cut-flow constraints, is developed to replace the conservation of flow equations. These constraints require that the flow over every separating cut be at least equal to total traffic requirements between nodes separated by the cut. In many network problems the cut-flow constraints are applied to the optimization problem of minimizing the sum of fixed and variable costs in a network.

SEYMOUR, P.D. (Merton College, Oxford) "Four-Terminus Flows."

Suppose that $s_1$, $s_2$, $s_3$, $s_4$ are variables of a graph, that each edge has a real-valued capacity, and $q_{ij}$ $(1 \leq i < j \leq 4)$ are six demands. There exist flows from $s_i$ to $s_j$ of value $q_{ij}(1 \leq i < j \leq 4)$, such that the total flow through each edge does not exceed its capacity, if and only if the obvious connectivity requirements are satisfied. This result extends Hu's 2-commodity flow theorem.

WATSON, Donald (RAAF Academy, Point Cook, Australia) "Network Methods in Models of Production."

The author explores the ground common to the theories of electrical networks and economic networks by generalizing the notion of a Kirchhoff network of multiterminal elements to that of a Leontieff network of multiterminal elements. In this context the author introduces Le Chatelier's principle and proves a converse to it, derives a generalization of Tellegen's theorem, and discusses the inheritance by a composite element of the properties of its constituent elements. Two types of maximizing firms are then treated as multiterminal elements; the preceding theory is applied to them and to composite firms constructed from them.

WILLIE, Randall R. (California, Berkeley) "A Theorem Concerning Cyclic Directed Graphs with Applications to Network Reliability."

In a recent paper, Satyanarayana and Prabhakar have presented a new topological formula for evaluating exact reliability of terminal-pair directed networks. Terms in the formula are associated in a one-to-one fashion with certain acyclic subgraphs of the network, cyclic subgraphs being of no importance. In their paper, however, the proof that cyclic subgraphs may be ignored seems to be incomplete. We consider an alternate proof of this fact.

Abstracts from NETWORKS, AN INTERNATIONAL JOURNAL 10, No. 2, Summer 1980.

AGRAWAL, P. (Bell Telephone) and M.A. BREUER (Southern California) "A Probabilistic Model for the Analysis of the Routing Process for Circuits."

A probabilistic model is developed for studying the problem of routing printed circuits. The model, which uses the density of blockages on the carrier as a parameter, is based on the path-searching mechanism of Lee's algorithm. Lee's algorithm is used in our analysis because it belongs to a class of pathfinding procedures which guarantee finding a path between two given points if one exists. It is shown that the routing probability, $\bar{R}(d)$, is bounded above by $\bar{P}(d)$, where $\bar{P}(d)$ is the probability of existence of an arbitrary path of ideal Manhattan distance d from a given source point. Analytical computation shows that $\bar{P}(d)$ is practically one until a density of about 35%. After this it sharply reduces, reaching a negligible value at a density of 43% for all but very small values of d. Some experiments related to the verification of the model are described. These experimental results show good agreement with the theoretically derived probabilities.

ANEJA, Y.P. (New Brunswick) "An Integer Linear Programming Approach to the Steiner Problem in Graphs."

Consider a connected undirected graph G[N;E] with N=S∪P, the set of nodes, where P is designated as the set of Steiner points. A weight is associated with each edge $e_i$ of the set E. The problem of obtaining a minimal weighted tree which spans the set S of nodes has been termed in literature as the Steiner problem in graphs. A specialized integer programming (set covering) formulation is presented for the problem. The number of constraints in this formulation grows exponentially with the size of the problem. A method called the row generation scheme is developed to solve the above problem. The method requires knowing the constraints only implicitly. Several other problems which can be put in a similar framework can also be handled by the above scheme. The generality of the scheme and its efficiency is discussed. Finally the computational result is demonstrated.

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BALL, Michael O. (Maryland) "Complexity of Network Reliability Computations."

This paper considers the difficulty of computing several measures of network reliability on directed and undirected networks. Results concerning the NP-difficulty of several network reliability analysis problems are unified and in several cases generalized to wider classes of measures. Reductions are also given that relate network reliability problems on directed and undirected networks and problems with and without node failures.

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CAMERINI, P.M., L. FRATTA and J. MAFFIOLI (Politecnico di Milano) "The K Best Spanning Arborescences of a Network."

An efficient algorithm is presented for finding, in order K best spanning arborescences in a given network with n vertices and m edges. The time is O(K m log n ), and space is O(K + m).

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KARP, Richard M. (California, Berkeley) "An Algorithm to Solve the m x n Assignment Problem in Expected Time O(mn log n)."

We give an algorithm to solve the m-source, n-destination assignment problem in expected time O(mn log n) under the assumption that the edge costs are independent random variables and the costs of the edges incident with any given source are identically distributed. The algorithm achieves its efficiency through an unusual application of priority queues.

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OZAWA, J. (Kyoto) "Realization of a Symmetric Terminal Capacity Matrix By a Tree with the Minimum Diameter."

Trees realizing a terminal capacity matrix (TCM) have a unique layer structure. An algorithm making use of this layer structure is presented for construction of a tree which realizes the TCM with the smallest possible diameter. This minimum-diameter tree has layers of stars. An upper bound on the minimum diameter is given for a prescribed number of vertices. Also presented are algorithms to construct a star and a tree of diameter 3 which realize the TCM as a minimum requirement matrix.

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# Ex-judge will sue over Connections

# THESIS SUMMARIES

*SOCIAL SUPPORT SYSTEMS, HEALTH AND ADAPTATION:  A CRITICAL REVIEW*

*Richard B. Weinberg   (Ph.D. Major Area Paper, Psychology, University of South Florida, Tampa) (January, 1980)*

*TABLE OF CONTENTS*

## SUMMARY

     The questionable efficacy of the traditional medical model for large scale problems of health and ill-
ness has led to investigations about alternative therapeutic sources in the social environment.  One such
source is the social network and support system.  The therapeutic and preventive potential of the network
and support system has most commonly been explained within the model which posits a relationship between
life stress and illness.  It has long been thought that an excessive accumulation of stressful life events
plays an important role in the development of physical and psychological illness.  The existence of a
strong social network or support system, however, has been said to act as a buffer of life stress' effects,
that is, to prevent impairment.

     This paper examines the theory underlying and the research supporting this conceptualization.  First
the concepts of social network, social support system and social support are defined.  As related to the
field of mental health, the construct of social network is narrowed from the anthropological perspective
of an entire social context to merely one individual and his or her links.  This "ego-centered" network is
defined as all those individuals whom a focal person knows and with whom he or she interacts, with no im-
plication as to the quality of these relationships.  A social support system is that subset of the social
network which is a source of any affective or material resource which contributes positively to the reci-
pient when exchanged among individuals.  These exchanged resources are seen as support.  Several studies
have attempted to specify the nature of support, commonly yielding the following:  1) material goods;  2)
social interaction;  3) intimacy and trust;  4) reassurance of worth;  and 5) information and advice.

     Social support has been found to be provided by several components of a network.  Evidence is presented
that one or more of the resources listed above is present in such social systems as the family, student
peers, co-workers and combat units, as well as larger socio-ecological systems as nation, kibbutz, and
neighborhood.

     As a basis for understanding the effects of social support it is often enlightening to examine related
animal literature.  Most of this research takes the form of comparing various post-stressor responses to
two groups of animals, those reared in isolation and those living in the company of same-species peers.
While the evidence supports the social relations-as-buffer of stress hypothesis, it can be noted that any
manipulation, when compared to the severe effects of isolation, is likely to show a beneficial effect.

     It therefore becomes necessary to look at research using humans.  With regard to physical health, a
review of the published literature did not find strong evidence favoring the support-as-buffer hypothesis,
however the conclusions were somewhat more positive concerning mental health.  An examination of social
support in the work-place and in the general population, while subject to many criticisms, was found to be
mildly supportive of the hypothesis.  The most consistent results were found in the research studying the
relationship between social networks and psychopathology.  According to this literature psychiatric patients
tend to have networks that can be characterized as family-dominated, very closely inter-connected and
relatively deficient in non-kin relations, resulting in the patients' becoming over-dependent on the fam-
ilies.

In assessing this entire literature many methodological issues were raised. Several suggestions that future researchers should consider were noted, including: 1) the need for more uniform definitions of the constructs; 2) empirically-developed measures; 3) longitudinal methodologies and multivariate techniques to help unravel cause and effect relationships; and 4) assessing the unique and shared contribution of personality variables as buffers of life stress.

It was noted that several national policy statements, an NIMH-sponsored conference and various calls for papers reflect the popularity that this area currently holds. For the field to maintain the current interest and contribute to greater understanding it is imperative that methodologies become more rigorous and that research become more systematic.

Note: A xeroxed copy of the full paper is available for $10 from Richard Weinberg, Psychology Intern, Harvard Medical School. Erich Lendemann Mental Health Center; Dept. of Psychiatry, Room 242; Staniford St.; Boston, Mass. 02114

# NEW BOOKS

J. A. Barnes (Sociology, Cambridge). 1980. Who Should Know What?: Social Science, Privacy and Ethics. Cambridge: Cambridge University Press. $4.95.

"Should people have to answer questions about their private lives? What happens to the information they give? Who has access to it? How is it used, and abused?

"Social scientists increasingly carry out research into what people want, what they do and how they live, but recently more and more people have become reluctant to supply information. This book examines the ethical and political obligations of sociologists, social anthropologists and social psychologists when they collect data and when they publish their findings. Professor Barnes offers arguments for and against a policy of inquiry by negotiation, in which citizens have a greater say in deciding what questions are asked and what appears in print. His discussion points out the precarious dilemma of an individual's privacy versus society's need to know." (Publisher's blurb.)

G. William Domhoff (California-Santa Cruz) ed. 1980. Power Structure Research. Beverly Hills, Calif.: Sage. $9.95.

"Power Structure Research brings together contributions by young researchers in this area, both to describe where the subfield now stands and what further lines of investigation are currently being pursued. The twelve contributors cover a wide range of topics, including urban decline and fiscal crises, traditional studies of the relationship between the corporate and government power networks, Jewish acceptance in the upper class, and attitudes of upper-class women." (Publisher's blurb.)

Contents: Introduction G. William Domhoff. 1. The Family Office: Coordinating Mechanism of the Upper Class, Marvin G. Dunn. 2. American Jews: In or Out of the Upper Class? Richard L. Zweigenhaft. 3. Upper Class Women: Class Consciousness as Conduct and Meaning, Susan A. Ostrander. 4. Can Capitalists Organize Themselves? J. Allen Whitt. 5. Declining Cities and Capitalist Class Structure, Richard E. Ratcliff. 6. The Development of Austerity: Fiscal Crisis in New York City, Eric Lichten. 7. Think Tanks and Capitalist Policy, Irvine Alpert and Ann Markusen. 8. Which Business Leaders Help Govern? Michael Useem. 9. The Corporate Community and Government: Do They Interlock? Harold Salzman and G. William Domhoff. 10. Organizational Analysis and Power Structure Research, Nancy Ditomaso.

Kenneth Gergen (Swathmore), Martin Greenberg (Pittsburgh) and Richard Willis (Pittsburgh) eds. 1980. Social Exchange: Advances in Theory and Research. New York: Plenum. $29.50.

Contents: THEORETICAL EXTENSION. A theory of indebtedness, Martin S. Greenberg. What should be done with equity theory? New approaches to the study of fairness in social relationships, Gerald Leventhal. The search for uniqueness and valuations of scarcity: neglected dimension of value in exchange theory, Howard L. Fromkin. Resource theory: interpersonal behavior, Edna B. Foa and Uriel G. Foa. EXCHANGE THEORY IN SPECIALIZED SETTINGS. Leadership and social exchange processes, Edwin P. Hollander. The study of organizations through a resource-exchange paradigm, Walter R. Nord. Sex roles, social exchange and couples, Richard R. Willis and Irene Hanson Frieze. An "incremental exchange" perspective on the pair relationship: interpersonal reward and level of involvement, George Levinger and L. Rowell Huessmann. CRITICAL ANALYSIS. Structural and motivational approaches to social exchange, Harumi Befu. The myth of reciprocity, Frederick L. Pryor and Nelson H. H. Graburn. New developments in operant conditioning and their implications, Barry Schwartz. Exchange theory: the transient and the enduring, Kenneth J. Gergen.

*Paul Holland (Ed. Testing Serv.) and Samuel Leinhardt. 1979.* Perspectives on Social Network Research. *New York: Academic Press.*

Contents: 1. The Advanced Research Symposium on Social Networks, Paul W. Holland and Samuel Leinhardt. 2. On Balance and Attribution, Fritz Heider. 3. Balance and Clusterability: An Overview, Dorwin Cartwright and Frank Harary. 4. The David/Holland/Leinhardt Studies: An Overview, James A. Davis. 5. Structural Sociometry, Paul W. Holland and Samuel Leinhardt. 6. A Primer on Blockmodeling Procedure, John M. Light and Nicholas C. Mullins. 7. Some Problems Relating to Randomly Constructed Biased Networks, Anatol Rapoport. 8. Network Analysis of the Diffusion of Innovations, Everett M. Rogers. 9. Deterministic Models of Social Networks, H. Rusell Bernard and Peter D. Killworth. 10. Independent Generalizations of Balance, Claude Flament. 11. Structural Control Models for Group Processes, Patric Doreian. 12. Toward a General Framework for Dynamic Theories of Sentiment in Small Groups Derived from Theories of Attitude Change, John E. Hunter. 13. Social Clusters and Opinion Clusters, Robert P. Abelson. 14. Equilibrating Processes in Social Networks: A Model for Conceptualization and Analysis, D. Garth Taylor and James S. Coleman. 15. Graph Sampling Compared to Conventional Sampling, Charles H. Proctor. 16. Estimation of Population Totals by Use of Snowball Samples, Ove Frank. 17. A Study of Interlocking Directorates: Vital Concepts of Organization, Joel H. Levine and William S. Roy. 18. Network Analysis in Large Social Systems: Some Theoretical and Methodological Problems, Edward O. Laumann. 19. Network Analysis: Orienting Notion, Rigorous Technique, or Substantive Field of Study? John A. Barnes. 20. Networks, Algorithms, and Analysis, J. Clyde Mitchell. 21 Cognitive Balance Theory and Social Network Analysis: Remarks on Some Fundamental Theoretical Matters, Bo Anderson. 22. Acquisition and Management of Social Network Data, Richard C. Roistacher. 23. Perspectives on Social Networks, Anthony P. M. Coxon. 24. The Theory-Gap in Social Network Analysis, Mark Granovetter. 25. Social Networks and Scientific Ideas: The Case of the Idea of Networks, Nicholas C. Mullins.

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*Terence Hopkins and Immanuel Wallerstein (Suny-Binghamton) eds. 1980.* Processes of the World-System. *Beverly Hills, Calif.: Sage. $9.95.*

"The contributors consider: (1) the theoretical place and interpretive importance of long waves or cycles to the functioning of the world-system; (2) the structural fluctuations between proletarianization and bourgeoisification within the system; and (3) the singularity of the development of capitalism and implications for the study of part-whole relationships in world-systems analysis." (Publisher's blurb.)

Tentative Contents:
I. THE WORLD SOCIAL ECONOMY: CYCLES AND TRENDS. 1. Stages of Accumulation and Long Economic Cycles, David M. Gordon. 2. From Hegemony to Competition: Cycles of the Core? Nicole Bousquet. 3. Long Waves and the Cotton-Spinning Enterprise: 1789-1849, Kenneth Barr. 4. Stages, Cycles, and Insurgencies: The Economics of Unrest, James E. Cronin. 5. Cycles of Formal Colonial Rules, Albert Bergesen.
II. THE WORLD CLASS STRUCTURE: PROLETARIANIZATION AND BOURGEOISIFICATION. A. Peripheralization and Class Formation. 6. Class Development in Rural Egypt: 1945-1979, James F. Toth. 7. Agriculture and Social Organization: Brazil's Agreste, 1845-1978, Jason W. Clay. 8. Capitalism and South African Agriculture: 1890-1920, Martin Murray. B. Social Movements and the Politics of the Capitalist World-Economy. 9. The Future of the World-Economy, Immanuel Wallerstein. 10. Maoist Conceptualization of the Capitalist World-System, Edward Friedman. 11. Proletarianization and Class Alliances in the Americas, Susanne Jonas and Marlene Dixon. 12. Celtic Nationalism in Britain: Political and Structural Bases, Charles C. Ragin. 13. State-Building and Ethnic Structures: Dependence on International Capitalist Penetration, Cynthia H. Enloe.
III. WORLD-SYSTEMS ANALYSIS: PROBLEMS OF METHOD. On the Holism of a World-Systems Perspective, Robert L. Bach. Commentary. I. Chris Chase-Dunn. II. Ramkrishna Mukherjee. III. Terence K. Hopkins.

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*Theodore David Kemper (St John's). 1978.* A Social Interactional Theory of Emotions. *New York: Wiley-Interscience.*

"This book presents a theory of emotions from the viewpoint of a sociologist. It is based on the proposition that most human emotions result from outcomes of interaction in social relationships; hence a complete theory must include the social bases of emotion both descriptively and causally.

"In order to investigate the social sources of emotion, we require a comprehensive model of social interaction. Opportunely, empirical work over the past two decades has converged strongly on two analytic dimensions of interaction in social relationships. These dimensions are power and status, and they locate with unusual precision what we mean sociologically by the term relationship. Understood in their relational significance, rather than as attributes of persons, they are extraordinarily functional not only for investigating the social environmental instigators of emotion but also, astonishingly, for better interpreting the data on organismic and psychophysiological concomitants of emotional experience.

"Notwithstanding the sociological provenience of the theory of this book, students of emotion in social psychology, experimental psychology, psychophysiology, psychiatry, child development, and similar disciplines will find extensive coverage as well as theoretical integration of the topic. I examine emotions at the social, cognitive, and physiological levels, both as situational responses to social stimuli and as situationally acquired characteristic modes of response. The unifying motif is the power-status model of social relations that I offer as the interactional basis of emotions.

"In an important sense I have accepted the invitation implicit in Mandler's (1975) introduction to a recent compendium of knowledge in the field of emotions: 'It seems useful not to fall into the trap of trying to explicate the common language. Nor can one aim yet for a deterministic, mathematical theory. . . . We might start not with the aim of explaining emotion but rather with describing a system that has had as its product some of the observations that have been called "emotions" in the common language.' This book presents such a 'system' from a sociological position.

"I have a second purpose. It overlaps but is not identical to presenting a theory of emotions. I also aim to address sociologists and social psychologists who have a broad interest in social relations, regardless of whether that interest has previously touched on emotions. I believe that the power-status model has general theoretical significance for sociological and social psychological analysis. The model, although focused here specifically on emotions, enables me nonetheless to treat many topics, including the structure of social relations; goals, methods, and outcomes of socialization; social and relational bases of mental and emotional disorder; parent-child relations; a theory and typology of aggression; types and developmental paths of love relationships; theoretical prospects for a discipline of sociophysiology; and relations of social exchange and their limits.

"I believe, too, that the power-status model can integrate by means of a common conceptual framework such diverse and often antagonistic perspectives in sociological and social psychological analysis as exchange and reinforcement theory, on the one hand, and the so-called 'cognitive' approaches, such as symbolic interaction, Verstehen, the ethnographic method, and ethnomethodology, on the other. To exchange theorists this book offers a model of social relations that encompasses domains of interaction excluded by the exchange approach. To cognitive sociologists and social psychologists this book offers the same model as a genotypical category scheme for the classification of a large number of the meanings and motives of action.

"The approach taken here also has a home. Perhaps it is most nearly that of reinforcement theory, broadly conceived. But the reader must not conclude that this is a behaviorist tract. If naively understood, behaviorism is at least as much to be eschewed as any other approach. Indeed, one of the merits of the power-status model is that it poses the question of what happens between actors in social relationships. For classical behaviorists and for many exchange theorists whose ideas derive from behaviorism (e.g., Homans, 1961), what happens is rewards and punishments. In this book I examine very carefully these concepts, which were developed not in a relational analysis, but in the analysis of individuals. The individual rat, or the individual man, does indeed act in terms of reinforcements—generally, what will gain rewards and avoid punishments—and ordinary psychological analysis correctly focuses on how the individual acts in terms of reward-punishment contingencies. But this is an inadequate model for what happens in relationships between humans. I differentiate behavior in relationships so that rewards can be understood as being given either voluntarily or involuntarily — this makes them no less rewards to the recipient, but the type of relationship is greatly changed. The division between voluntary and involuntary action, which articulates with status and power relations, respectively, is ignored in conventional reinforcement analyses. Yet this distinction, I believe, is fundamental to the description of all human social relationships and of their consequences, including emotions. This is a large claim, and I hope the materials presented below provide substance for it." (Preface)

Contents: 1. The Study of Emotions. 2. Fundamental Dimensions of Social Relationships. 3. A Sociological Theory of Emotions: Structural Emotions. 4. Anticipatory Emotions. 5. Consequent Emotions: I. 6. Consequent Emotions: II. 7. Toward a Sociophysiology of Emotions: I. The Evidence for Specificity. 8. Toward a Sociophysiology of Emotions: II. The Evidence Against Specificity. 9. Distressful Emotions and Emotional Disorders. 10. Parameters of Punishment and the Distressful Emotions. 11. The Choice of Dependent Variables in the Study of Socialization: An Approach to the Positive Emotions. 12. Love as a Social Relationship: I. The Status Dimension. 13. Love as a Social Relationship: II. The Power Dimension. 14. Conclusion. Appendix I. Factor Analysis and the Fundamental Dimensions of Social Relationships. Appendix II. Power and Status: Conceptual and Methodological Issues. Appendix III. Methodological Issues in Epidemiological Studies of Emotional Disorder.

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*Edith Kurzweil.* *The Age of Structuralism: Levi-Strauss to Foucault.* *Irvington, N.Y.: Columbia University Press. $6.95.*

"This study of the sociological, political and philosophical currents of structuralism offers introductions to 8 prominent French thinkers--5 who fueled the movement and 3 who provided intellectual opposition": Lévi-Strauss, Althusser, Barthes, Lacan, Foucault, Lefèbvre, Touraine and Ricoeur (from publisher's blurb).

*Miklas Luhman (Bielefeld).* 1980. Trust and Power. *New York: Wiley-Interscience. $28.95.*

"A novel, theoretical treatment of these 2 social relationships, examining their wide-ranging significance in social, political and economic life." (Publisher's blurb.)

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*Hugh Foot, Anthony Chapman (Institute of Science and Technology, Univ. of Wales) and Jean Smith (Whitchurch Hospital, Cardiff) eds. 1980. New York: Wiley-Interscience. $34.00.*

"Researchers give accounts of the different facets of friendship throughout childhood. Includes discussion of children's relationships in the classroom, their conceptions of their peers, and the development of friendship cliques." (Publisher's blurb.)

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*Dennis Olsen (Carleton).* 1980. The State Elite. *Toronto: McClelland and Stewart.*

"This book examines the state and the state elite in Canada. The term state stands for a system of institutions under both federal and provincial jurisdictions. It includes legislatures, courts, the military and police as well as the many administrative departments and agencies of government. The Canadian state system is a complex of institutions and organizations ranging in size from vast federal departments, such as National Defence and Health and Welfare, to the tiny Workmen's Compensation Board of Prince Edward Island, and ranging in authority from the Supreme Court of Canada to the Chief Inspector of Factories and Elevators in Vancouver. As a system of institutions, the state persists through time. Many of the institutions in the Canadian state, for example, reach back to 1867. But the state also changes over time, as old institutions are downgraded and new ones are created and take their place in the system. Chapter 1 discusses the main form of change that shaped the Canadian state system in the period 1953-73.

"Chapters 2, 3, and 4 focus on the backgrounds and careers of members of the state elite. The elite is made up of politicians, judges, and bureaucrats, those who occupy the top positions in the state system. They are the decision makers of the state, just as members of the corporate elite are the decision makers of the private sector. It is worthwhile to study these small elite groups because of the far-reaching social consequences that follow from their decisions. A decision to go to war would be a dramatic example of an important decision made by a state elite. But one need not think only of the dramatic cases. On an almost daily basis the state elite is engaged in making policies that shape the social and economic conditions of existence for the rest of us. In Chapter 5 we examine two such decisions: first, the decision to regulate and control the price of oil and oil products in Canada, a decision made by the state elite during the so-called energy crisis of 1973-74, and second, the decision to impose a mandatory system of wage and price controls announced in October, 1975. Both these decisions had far-reaching social and economic consequences. Although they were not wartime decisions, they nevertheless deeply affected the lives of most Canadians." (Preface)

Contents: 1. The Changing State System. 2. The Political Elite. 3. The Judicial Elite and Class Justice. 4. The Bureaucratic Elite. 5. The State Elite in Action. 6. The State Elite in Society.

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*John Scott (Leicester).* 1979. Corporations, Classes and Capitalism. *London: Hutchinson. £3.90.*

"The aim of this book is to discuss some of the main issues involved in the development of the modern business corporation. The issues covered are not those of the internal administration of the corporation but those which relate to the wider significance of the corporation in capitalist society. I discuss the patterns of ownership and control in the corporate system and the relation of the corporation to the class structure, the state, and the world economic system. These issues are discussed in terms of two general theories. The theory of industrial society, based on a liberal and pluralistic political viewpoint, is drawn from the mainstream of American and European sociology. The theory of capitalist society, based on a Marxist political position, is drawn from the textbooks, pamphlets and monographs of orthodox Marxism. These two theories have raised most of the issues analysed in this book and have stimulated much of the empirical research which is discussed. My argument is that neither theory is adequate, and I show that developments at the empirical and theoretical levels point beyond these theories to the need for a new interpretation of industrial capitalism. Much new empirical work has been produced in recent years, and this has led to the need to reinterpret previous research. At the same time, both theoretical traditions have broken down. For example, Marxist writers such as Poulantzas, Offe and Habermas have been severely critical of the orthodox theory of capitalist society. The work of these theorists has complemented the development of empirical research, and my aim in this book is to lay the foundations for further advance.

"The two theories are presented in Chapter 1 and are discussed as ideal types, taking no account of more recent theoretical positions. Chapter 2 discusses the concepts of ownership and control, and Chapters 3 and 4 relate these concepts to empirical data on the major capitalist societies. Chapter 5 shows how ownership and control are related to the structuration of a propertied class, and Chapter 6 analyses the economic role of the state. Chapter 7 completes the analysis by looking at the international dimension and, particularly, the emergence of the multinational corporation. Finally, Chapter 8 draws together some of the main conclusions of my analysis." (Preface)

Contents:
1. Contending theories of industrial capitalism: The theory of industrial society; The theory of capitalist society.
2. Property relations and the mediation of control: Legal forms and social relations; Modes and mechanisms of control.
3. Capital ownership and strategic control: Ownership and control in the USA; Ownership and control in Britain; Further evidence: Europe, Australia and Canada.
4. Finance capital and strategic control: Who controls the controllers? From financial empires to spheres of influence; Corporate interlocking and bank power.
5. The corporation and the class structure: Relations of possession and social classes; The managerial reorganization of the propertied class; The structuration of the propertied class.
6. The economy and the state. Market behaviour and capital accumulation; The emergence of a political economy; The mechanisms of state intervention.
7. The internationalization of capital and the multinational company: The movement of international capital; The multinational company and the national economy.
8. The corporation in capitalist society: some conclusions.

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*John Sturrock, ed. 1979. Structuralism and Since: From Lévi-Strauss to Derrida. Oxford: Oxford University Press. £2.95.*

Contents: Introduction, John Sturrock; Claude Lévi-Strauss, Dan Sperber; Roland Barthes, John Sturrock; Michel Foucault, Hayden White; Jacques Lacan, Malcolm Bowie; Jacques Derrida, Jonathan Culler.

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*Ann Swidler (Stanford). Organization Without Authority: Dilemmas of Social Control in Free Schools. Cambridge, Mass.: Harvard University Press. $12.50.*

"Based on ethnographic case studies of 2 free schools, this book synthesizes material from studies of free schools as well as other alternative organizations such as communes, work collectives, and free clinics to describe the distinctive patterns of leadership, social pressure, and social control that emerge in such organizations." (Publisher's blurb.)

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*FURTHER NEWS FROM CANADA...*

The answer to Mrs. Foster's query about the moose...

A It not only is edible, but good for you, too, being rich in phosphorus. Some Indians eat it, believing they will gain some of the strength and wisdom of the "monarch of the north woods." The brain is more commonly rubbed into hides to soften and tan them.

Unless your husband removed the brain when he bagged the beast, chances are it wasn't properly cooled and should be discarded, not eaten.

# ABSTRACTS

BALL, Richard E., George J. WARHEIT, Joseph S. VANDIVER and Charles E. HOLZER III (Florida) 1980. "Friendship Networks: More Supportive of Low-Income Black Women?"

The civil rights movement and the urban unrest of the 1960's, coupled with the furor that accompanied the "Moynihan Report," focused increased attention on the low-income black family. Moynihan's critics suggested that black families have compensatory mechanisms for coping with adversity that are not available to whites. One such possible mechanism is that of friendship networks. This study compares a probability sample of 111 black and 109 white low-income females on four components of their friendship networks. No statistically significant differences were found in regard to the existence of close friends nearby, frequency of contact with them, or perceived potential helpfulness of friends to assist with major problems. Whites reported more requests of friends for assistance with major problems than blacks. Overall, the data offer no support to the contention that there are more highly developed friendship networks among low-income black females than among their white counterparts.

BARON, James N. (California, Santa Barbara) 1980. "Indianapolis and Beyond: A Structural Model of Occupational Mobility Across Generations."

Several aspects of Rogoff's classic mobility study (1953) which have influenced subsequent research are reviewed. Recently developed log-linear techniques are used to estimate the "densities" associated with intergenerational occupational moves. A structural model derived empirically from Rogoff's data for Marion County, Indiana, from 1910 to 1940, is applied to an intergenerational mobility matrix from a 1973 national sample, accounting for five-sixths of the baseline association. The results confirm the fundamental invariance of mobility trends documented by previous research. Net mobility patterns apparently reflect a mental-manual division among occupations, with the more "traditional" service sectors and farming falling in between, rather than a hierarchical status dimension.

BECK, E.M. (Georgia) 1980. "Labor Unionism and Racial Income Inequality: A Time-Series Analysis of the Post-World War II Period." American Journal of Sociology, 85 (January): 791-814.

In this paper the effects of labor unionism on the degree of interrace and intrarace income inequality in the post-World War II period are investigated. Two opposing theoretical positions are outlined: the first views unionism as a means of maintaining the favorable economic status of whites to the detriment of nonwhites, whereas the second position views unionism as a manifestation of the consciousness of the working class in capitalist society. The former point of view predicts that gains in unionism will lead to heightened between-race inequality but reduced within-race inequality. The latter suggest that such increases will produce declines in both between- and within-race inequality. Using a national aggregate time series for the 1947-74 period, this study found more support for the white-protectionist than for the class-consciousness interpretation.

BEELS, C. Christian. (NYS Psychiatric Institute). 1979. "Social Networks and Schizophrenia." Psychiatric Quarterly 51 (Fall): 209-215.

This article begins with an introduction to social networks research and its practical importance in the understanding and treatment of schizophrenia, and concludes with a consideration of the experience, the phenomenology, of schizophrenia, from a social network point of view.

BLAU, Peter (SUNY - Albany and Columbia) 1980. " A Fable About Social Structure." Social Forces 58 (March): 777-78.

A science-fiction fable which leads to "a theorem: the more the social differences and the cor-related social differences existing in a society penetrate into its communities and neighborhoods the more prevalent will be intergroup relations of all kinds, among groups, strata, communities, and neighborhoods" and a paradox : although we assume "that people's associations are governed by ingroup preferences, common interests, and outgroup rejections, which implies that social differences impede associations, this very assumption also implies that certain structural conditions, notably inter-secting parameters, promote associations among people whose attributes and positions differ. Even if all persons entirely restrict their social life to ingroups and completely refrain from associating with outgroup members in terms of some social attributes which are most salient to them, many inter-secting parameters in intergroup societies make it impossible for any person not to participate in intergroup relations along numerous lines. A further implication of complex intersection is that there will be some intergroup relations along all lines unless the same social differences are most salient for every member of the society in all situations.

Two Papers by,

BLUTE, Marion (Toronto) 1980. "Collective Behavior, Social Learning, and Sociocultural Evolution: A Replication of a Classic Experiment in Evolutionary Biology." (Unpublished Paper).

An old question about collective behavior, whether people tend to behave similarly because they are being caused to do so by the same stimulus or because some social learning process such as imitation is involved is approached from a social learning and sociocultural evolutionary point of view by re-plicating the logic of a classic experiment in evolutionary Biology. Results similar to the biological case were obtained and imply that in the sociocultural world, as in the organic, things tend to be similar because of social learning or common cultural "descent" and that sociocultural evolution, as organic evolution, is Darwinian rather than Lamarckian.

"Learning Theory and the Evolutionary Analogy" (Unpublished Paper).

In this article, past comparisons of learning and evolution as analogous processes are discussed and some inaccuracies and omissions in those discussions are pointed out. The evolutionary analogy is examined for its ability to suggest solutions to five fundamental theoretical issues about learning - superstitions, why a reinforcer has the effect it does, the relationship among various procedures yielding learning, the relevance of the matching law to the problem of what reinforces an avoidance response, and whether behavioral and cognitive views of learning can be reconciled. In each case it is argued that the analogy is instructive.

BREIGER, Ronald (Harvard) Forthcoming. "Social Control and Social Networks: A Model from Georg Simmel." To appear in Toward a General Theory of Social Control, ed. by Donald Black, New York: Academic Press.

The present essay explores possibilities for a social network theory of social control. The first part emphasizes Simmel's sociology of freedom and constraint, focusing on three of his images: the paradoxical duality of individual persons and social circles, the existence of multiple-group affilia-tions that both create and unify these levels, and the image of freedom as specific configurations of social relationships within a matrix of social control. The second part develops a specific model as one way to capture these images and relate them directly to research issues in the network analysis of social structure. The formal model is then applied to an empirical instance of social control: the network of international oil flows immediately preceeding the embargo of 1973-74.

BREIGER, Ronald L. and James G. ENNIS (Harvard) 1979. "Personae and Social Roles: The Network Structure of Personality Types in Small Groups." Social Psychology Quarterly, 42 (3) : 262-270.

This paper addresses the tension between the existence of generalized "types" of groups members (Bales, 1970; Bales et al., forthcoming ) and specific interactions among concrete individuals in small groups. Following a suggestion of Mills (1971), we ask how these abstracted "types" interlock in an observable group. A blockmodel structure defined on multiple network data yields "positions"

that are coherent along two of Bales' analytical dimensions. The network patterns among these positions are analyzed to reveal their social roles with respect to one another, while the statistical association of positions with Bales' dimensions is employed to depict the character of "typical" members of each cluster. These two analyses mutually reinforce and extend one another, and operationalize concepts for research on the junction of personality and social role.

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BRETON, Raymond (Toronto) 1979. "Ethnic Stratification Viewed from Three Theoretical Perspectives." pp. 270-294 in Social Stratification: Canada. Edited by James Curtis and William Scott. 2nd Edition. Scarborough, Ontario: Prentice-Hall.

Three perspectives organize most of the existing research in the area of ethnic stratification: the individual competition approach, the class approach, and the conflict or social closure approach. This paper attempt to describe the three perspectives and to examine their implications for ethnic stratification. Three dimensions of ethnic stratification and the ways they are dealt with in each approach are examined. First, the analysis considers the sources of ethnic inequality and the hypotheses to which each approach leads. Second, whether and to what extent each approach views ethnicity as an asset or a liability for various categories of social actors in the socio-economic system is examined. This question is dealt with in relation to the orientations and strategies that people are likely to adopt with regard to their ethnic identity and background. Finally, what each approach identifies as the main occasions of interethnic conflict is considered briefly.

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BURT, Ronald S. (California-Berkeley) 1979. "Models of Network Structure." Annual Review of Sociology, Vol. 6.

This is an analytical synopsis of network models as representations of social differentiation in a system of actors. Included with numerical illustration are models of: ego-networks, centrality, prestige, hierarchy, cliques, structural equivalence, triad structures and role structure. The models are reviewed within a sixfold typoloty specified by two parameters; the level at which a model aggregates actors (individuals, subgroups, systems) and the frame of reference in which a model analyzes actors (relational—relations as independent in analysis; positional--relational patterns define network positions in analysis). Each class of models is discussed in regard to its content and strategies for hypothesis testing. The following is a detailed table of contents:

1. Introduction: The purpose and scope of the chapter is presented with a brief statement of the models to be discussed and the framework within which they will be discussed.

2. The Data Described by Models of Network Structure: This section has two purposes: (1) It makes explicit the scope and primitive concepts in network models. (2) It provides a setting for distinguishing data-generating models from models of network structure per se. Systems of Actors: This section describes system boundaries and efforts at large population network sampling. Networks of Relations: This section distinguishes the form and content of relations so as to define networks and describe two classes of relational forms; $z_{ji}$ as the strength of the link from J to I versus their level of joint involvement in activities. Numerical illustration is introduced for use throughout the chapter and is used here to describe matrix manipulations capturing indirect connections in a network.

3. Describing Relations in Which a Single Actor is Involved: The Ego-Network: This section defines an ego-network and describes its range, density and multiplexity. The Network Position: This section defines an actor's position in a network and describes its centrality and prestige. Hypothesis Testing: These models are not tested as hypotheses so much as they are used as variables, however, these models are most responsible for the substantive advances made with network models.

4. Describing Relations Involving Multiple Actors in a Network Subgroup: The Network Clique: The cohesive primary group is defined as a clique for which there are many alternative models. Types of strong components in graph theory are the focus here. The Jointly Occupied Position: Status and role-set are defined as interdependent aspects of a network position jointly occupied by structurally equivalent actors. Alternative models of structural equivalence are evaluated. Hypothesis Testing: The link between structural equivalence and the rank of a covariance matrix is described and used to test equivalence as a hypothesis. There is no corresponding test for a clique, however, cliques can be viewed as a special type of status whose occupants are connected by strong relations.

5. Describing Relations in an Entire System of Actors: Network Density and Transitivity: The triad census is defined and used to describe the density of types of relations in a network. Four models of triadic structure which leave unidentified the overall structure of a network are defined in terms

of the triad census; the balance model, the cluster model, the ranked cluster model and the transitivity model. The Social Structure of Network Stratification: System centralization/hierarchy is captured by inequality models. System status/role-sets are captured by homomorphisms of observed relations represented by the social topology of the system. Systems structure is represented by tables of densities between status occupants in each network and structure in separate systems is compared in terms of congruence classes across, and classes in a joint homomorphims of, role structures generated by a block-model of each system. Hypothesis Testing: Test statistics for the triad census are discussed and support for the transitivity of affect relations is presented. The isomorphism of the actor-status and indicator-concept epistemic linkage within a system's social topology is used to statistically test hypotheses concerning multiple sets of structurally equivalent actors. Tests for comparing whole networks are reviewed.

6. Conclusions: The six classes of models in Table 1 are reduced to two; ego-networks and the triad census versus positional models based on a system's social topology, where the former are optimally suited to describing the typical relations in which actors are involved while the latter are optimally suited to describing actors and subgroups in terms of the overall structure of system differentiation. Three problems with applications of network models that give them an ad hoc appearance are discussed.

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CAMIC, Charles (Wisconsin-Madison) 1979. "The Utilitarians Revisited." American Journal of Sociology, 85(3).

For generations sociologists have attacked utilitarian social theory as inadequate theoretically. At the same time, their presentist orientation toward sociology's past has prevented a direct examination of the utilitarians in their own right. This paper rejects that orientation and investigates the social theory of the major utilitarians. David Hume, Adam Smith, Jeremy Bentham, and John Stuart Mill. No alleged characteristic of utilitarianism--from the atomistic, rationalistic model of social action to the failure to solve the problem of order--adduced in the traditional attack upon it is actually found in the work of the utilitarians. The paper then outlines the historical process whereby the prevailing mythology concerning utilitarianism developed. The hallmark of that process is not the cumulative development of social theories but the displacement in changing cultural and social circumstances, of the concerns of utilitarian social theory--a displacement successively evident in the work of Spencer, early American social scientists, and Park and climaxing in Parsons's, The Structure of Social Action. The paper concludes by offering a sociological interpretation of Parsons's selective account of utilitarian social theory and by identifying the constricting, but still pervasive, theoretical implications of that account.

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CHASE, Ivan D. (SUNY-Stony Brook) 1980. "Social Process and Hierarchy Formation in Small Groups: A Comparative Perspective" (Unpublished Paper).

Dominance hierarchies are reported in small groups for humans and many species of animals, and these hierarchies are often linear or near linear in structure. Most of the theories that have been proposed to explain dominance relationships in both the human social sciences and in animal behavior rely on differences in individual characteristics. Examination of these theories reveals that they require stringent conditions to successfully predict the presence of linear and near linear hierarchies, and the available data indicate that these conditions are not met. Coupled with this theoretical perspective, there has been a lack of studies investigating the behavioral dynamics of hierarchy formation in either animals or humans. This study helps alleviate the current problems in hierarchy research by reporting the results of an animal study of the dynamics of hierarchy formation and by developing a new theoretical approach which explains how a hierarchy arises from the structure of the interaction process in a group context. It is suggested that this theoretical approach has a general application to the study of hierarchy formation in human and animal groups and perhaps to the study of other kinds of small group social structure.

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COHEN, Carl (NYU Medical Center) and Jay Sokolovsky (Maryland-Baltimore). 1979 "Clinical Use of Network Analysis for Psychiatric and Aged Populations." Community Mental Health Journal 15 (Fall): 203-13.

Despite a recent renewal of interest in natural community support networks and self-help groups, there currently exist no systematic therapeutic approaches for working with network systems. Over the past two decades advances in the field of social network analysis have laid the groundwork for its conversion to a clinical tool. This paper illustrates how network analysis can provide quantitative and qualitative data useful in therapeutic interventions and agency planning decisions.

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COXON, A.P.M (University College, Cardiff) and Charles JONES (McMaster). 1980. "Multidimensional Scaling: Exploration to Confirmation." Quality and Quantity 14: 31-73.

"The main purpose of this paper is to show how MDS methods have been refined since (an) earlier review was written and how the uses of MDS have shifted from exploratory to confirmatory. We also point to some statistical problems which seem inseparable from the MDS approach to data analysis."

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DEAN, Alfred (Albany Medical College of Union University) and Nan LIN (SUNY-Albany) 1977. "The Stress-Buffering Role of Social Support." The Journal of Nervous and Mental Disease, 165(6).

Over the past 20 years, a sizable body of literature has developed which serves to establish that stressful life events are associated with the onset, incidence, and prevalence of a wide range of physical and psychiatric disorders. As measured by the Holmes and Rahe Social Readjustment Rating Scale, or similar instruments, the stressful life events are fundamentally sociological in nature. Yet, paradoxically, the research has been largely limited in the relevant basic sociological theory and data brought to or yielded from investigation.

Recently, however, several prominent researchers have emphasized the importance of studying the role of social support systems as possible buffers or mediators of stress. The most basic objective of this paper is to contribute to the advancement of such studies by clearly identifying key empirical, theoretical and methodological problems and suggesting some approaches to their resolution. Specifically, this paper offers: a) a selective review of the essential status of empirical knowledge; b) an examination of the nature and significance of social support systems; c) clarification of methodological and theoretical problems; and d) detailed proposals for approaching problems of measurement and research design.

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DEAN, Alfred (Albany Medical College of Union University), Nan LIN (SUNY-Albany) and Walter M. ENSEL (SUNY-Albany) 1980. "The Epidemiological Significance of Social Support Systems in Depression." in: Roberta G. Simmons, Ed., Research in Community and Mental Health, Vol. 2, Greenwich: JAI Press.

It is apparent that depression in a community population is associated with social support problems of the following nature: (1) inability to satisfy monetary wants or needs; (2) the inability to master other instrumental functions (demands); (3) interpersonal conflicts (communication problems); (4) in-adequate primary relationships (companionship problems); and (5) dissatisfaction with the community. It is also clear in this community population that recurrent problems of this nature have greater direct consequences on depression than recent life events.

Some of the further implications of these findings will be briefly discussed.

The present study suggests that the extent to which the social systems in which individuals are located fulfill routine adaptive and adjustive functions (i.e., provides active social support) is of distinct epidemiological significance in depression. This active support concept is consistent with the structural-functional frameworks of several investigators (Dean and Lin, 1977; Kaplan, Wilson and Leighton, 1976; Henderson, 1977, 1978). Other studies have also discerned the independent effects of active social support rather than its interactive effects with life events (Myers, et al., 1975; Andrews, et al., 1978a).

By contrast, interest in the buffering functions of social support has tended to focus upon reactive social support. For example, Husani and Neff, (1978) studied the supports which were available to help individuals cope with their specific life events. The availability of such supports reduced the risk of depression significantly, though modestly. Of course the active social support system may be regarded as the system which will be reactive in the context of life events -- the approach essentially taken by some investigators (Gore, 1978; Nuckolls, et al., 1972).

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FEINBERG, Stephen E. and Stanley WASSERMAN (Minnesota) 1979. "Categorical Data Analysis of Single Sociometric Relations." St. Paul, Dept. of Applied Statistics, University of Minnesota, Technical Report No. 362.

Methods based on fitting loglinear models are adapted for the analysis of sociometric relationships among a group of actors, represented as a directed graph. By arranging directed graph data in a four-dimensional cross-classified table, the dyadic relationships between individual actors can be fully studied with a variety of models. These models are based on Holland and Leinhardt's probability density for directed graphs, $p_1$, but extend their approach to model data from single sociometric generators which

include variables measuring nodal attributes. We show how both $p_1$ and these new models can be fit using standard iterative proportional fitting algorithms. A network of organizations from a midwestern community is used to illustrate these new ideas.

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FRAME, J. Davidson and Mark P. CARPENTER 1979. "International Research Collaboration." Social Studies of Science 9: 481-97.

International collaborative behaviour among scientists is investigated by examining international co-authorship patterns for a number of scientific fields using the 1973 Science Citation Index. Three major findings emerge: (1) the more basic the field, the greater the proportion of international co-authorships: (2) the larger the national scientific enterprise, the smaller the proportion of international co-authorship; (3) international co-authorships occur along clearly discernible geographic lines, suggesting that extra-scientific factors (for example, geography, politics, language) play a strong role in determining who collaborates with whom in the international scientific community.

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Two Papers by,

FRANK, Ove (Statistika inst., Lund). 1980. "A Survey of Statistical Methods for Graph Analysis." (Unpublished Paper).

This survey gives a unified presentation of some results in statistical graph theory. The emphasis is on inference from sampled subgraphs of various kinds and on models for randomly deformed graphs and digraphs which can be used for investigating empirical sturctures.

"On random planar graphs." Paper presented at the 4th International Conference on the Theory and Applications of Graphs, W. Michigan U.

Let the vertices and edges of a planar graph G be randomly deleted, and let $\tilde{G}$ be the subgraph consisting of the edges which remain between the remaining vertices. We investigate the random planar graph $\tilde{G}$ and find bounds for the expected values and some of the variances of its number of vertices, edges, faces, triangles and components. An application is given to a statistical estimation problem for a plane map.

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FRANK, Ove and Klas SVENSSON. (Statistika Inst., Lund) 1980. "On probability distributions of single-linkage dendrograms." (Unpublished Paper).

There are $\binom{N}{2}!$ ways to order the pairwise similarities between N objects, assuming no ties. According to single-linkage (SL) clustering, each such order determines a dendrogram for the N objects. We give an algorithm for calculating the number of different SL-dendrograms on N objects. We also give an algorithm for calculating the probability distribution of the SL-dendrograms under pure randomness, i.e. assuming that all the similarity orders are equally probable. The results are used to illustrate the statistical risks for small values of N, when SL-dendrograms are used to test cluster structure hypotheses.

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FROLAND, Charles, et al. (Oregon Mental Health Division) 1979. "Social Support and Social Adjustment: Implications for Mental Health Professionals." Community Mental Health Journal 15 (Summer): 82-93.

The general importance of an individual's support network has been recognized in the field of community mental health; yet a more detailed understanding of how a client's available social ties may contribute to his or her adjustment is presently lacking. This study used network analysis to examine differences in the social networks of mental health clients to identify factors associated with positive social adjustment. Subjects were selected from three different types of mental health programs as well as from the general population of Marion County, Oregon. Results generally revealed that subjects from the community sample more often would look to immediate family members for support. Better functioning chronic clients emphasized professional contacts, whereas more poorly adjusted chronic clients would look to friends for support. The results have implications both for understanding the nature of the support available to a client and mobilizing the support resources of the existing network of relationships to aid adjustment to community living.

GORDON, Michael (Connecticut) 1977. "Primary-Group Differentiation in Urban Ireland." Social Forces 55 (March)

This research attempts to replicate and extend the work of Litwak and Szelyeni on primary group structures in Hungary and the United States. Their findings indicated that proximity of kin and occupation affected primary-group relationships. Employing data drawn from interviews with 686 Irish women, we generally confirmed their findings; however, by means of a step-wise regression procedure we were able to show that occupational prestige was negatively correlated with kin usage in our three time-demand situations because of its association with low fertility in respondent's families of orientation and higher rates of geographic mobility.

GORDON, Michael (Connecticut) and Helen DOWNING (University College-Cork) 1978. "A Multivariate Test of the Bott Hypothesis in an Urban Irish Setting." Journal of Marriage and the Family (Aug).

In her classic study, Family and Social Network, Bott (1971) argued that the connectedness of a married person's social network was negatively related to his/her marital integration. Using a sample of 686 married Irish women in Cork City this hypothesis was tested, and the results of a multivariate regression analysis revealed that neither network connectedness nor the strength of the respondent's emotional ties to the network had any explanatory power. The two variables that accounted for most of the 29 percent explained variance were the number of wife's network members shared by her husband and SES. A reconceptualization of the Bott hypothesis incorporating these findings with networks seen as compensatory rather than mediating mechanisms, is offered.

HECKATHORN, Douglas (Missouri-Kansas City) 1979. "The Anatomy of Social Network Linkages." Social Science Research 8: 222-252.

Social network analysis has developed impressively during the last quarter century, producing a variety of formal models and innumerable field studies. However problems of articulation have developed between the formal models and field studies. This paper is predicated upon the judgement that the solution to this difficulty lies in more (not less) highly elaborated formal models. The aim is to present a means for representing a very broad range of social phenomena using digraphs. Departing from an anatomical investigation of the linkages and nodes of conventionally represented network structures,-and from a modified exchange-theoretic concept of sanction, means are presented for conceiving social interaction as flows of sanctions and messages which are depicted as arcs in a diagraph whose nodes represent social actors. Means are also presented for representing value systems, belief systems, and message content in digraph terms. Finally, several implications are discussed of the proposed conception of networks. It is suggested that its employment in the field may increase the range of phenomena formally expressible in network models, without thereby making excessive demands for inaccessible data. Second, means are proposed for experimentally realizing selected digraphs in the small-group laboratory and for coordinating field with laboratory investigations. Third, suggestions are made for integrating social network analysis with a formal decision theory, such as mathematical decision theory or bargaining theory. The result is formal models to which systems theory may be applied as a methodology for system simulations.

HIRSCH, Barton (Stanford Medical Center). 1980. "Natural Support Systems and Coping with Major Life Changes." American Journal of Community Psychology 8: 159-72.

An exploratory study is reported which sought to identify those natural support systems that enhance coping with major life changes. Subjects were 20 recent younger widows and 14 mature women recently returned to college. Support systems were classified on the bases of five alternative supportive inter-actions as well as on two measures of structural integration adopted from sociology and anthropology. Supports were assessed on daily logs for 14 consecutive days. Mental health was assessed via standard measures of symptomatology, mood, and self-esteem. Among supportive interactions, cognitive guidance was significantly associated with symptomatology and mood, while socializing was significantly associated with self-esteem. Both lower density (less integrated) support systems and multidimensional friendships were significantly associated with better support and mental health. Discussion centers on delineating two prototypical support systems and developing a model for conceptualizing their differential impact on coping and adaptation.

ISAAC, Larry (Florida State), Elizabeth MUTRAN (Duke) and Sheldon STRYKER (Indiana) 1980. "Political Protest Orientations Among Black and White Adults." American Sociological Review 45 (April):191-213.

The political protest activities of the late 1960s and early 1970s stimulated a flurry of empirical research by social scientists seeking explanations. Most of the research, aimed at explaining individuals' radical political orientations, willingness to use protest and perhaps violence, or actual riot or protest participation, has been guided by either a mass society perspective or some variant of the relative deprivation model. After outlining the basic elements of these two theories as well as an alternative differential socialization theory, central causal features of each theory are integrated into a structural equation model designed to explain individual political protest orientation, and the model (allowing for measurement error in the endogenous constructs) is estimated on separate samples of white and black adults. The results indicate strong race-specific differences in the formation of political orientations. Explanations for these differences are examined; the empirical patters are interpreted as supporting a theory of differential political socialization.

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JUDGE, Anthony (Union of International Associations, Brussels) 1978. "Tensed Networks: Balancing and Focusing Network Dynamics." Transnational Associations Journal 78: 480-85.

Judge describes what he calls 'flabby' networks, ones that do not seek unlike elements (people), and using classic Bucky Fuller concepts he supports the notion that balance in network development is dependent on there being both compatibility (tensions which hold the network together) and confrontation (compression) which moves network building forward." (Abstract by Steve Johnson in Rain, 11/79).

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KALLEBERG, Anne L. and Larry J. Griffin (Indiana) 1980. "Class, Occupation, and Inequality in Job Rewards." American Journal of Sociology, 85 (Jan): 731-768.

This paper argues that within an economic system class and occupation are conceptually distinct positions. Class refers to control by some positions over others in a production system, and occupation refers to the functional differentiation of positions in a technical division of labor. The effects of measures of class and occupation on both economic and noneconomic rewards are analyzed using data obtained from two national samples of individuals. Class and occupation are found to have independent effects on both types of job rewards, and the commonly used measures of occupational position (Duncan's socioeconomic index [SEI], complexity/skill requirements of the occupation) do not adequately explain inequalities in job rewards associated with occupation. The implications of this analysis for the study of positional inequality in general are indicated.

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KALLEBERG, Anne L. and Aage B. SRENSEN 1979. "The Sociology of Labor Markets." Annual Review of Sociology.

The aim of this essay is to provide a synthesis of empirical and theoretical research in an area that is a point of convergence for much of the literature on social stratification, occupational sociology, industrial sociology, the sociology of organizations, and labor economics. The analysis of labor markets is an important concern for sociological inquiry; it permits an understanding of the way macro forces associated with the economy of a society and elements of social structure impinge on the microrelations between employers and workers in determining various forms of inequality. Since the majority of people in industrial society obtain income and other rewards in exchange for work, labor market processes form the central mechanisms of social distribution in industrial society (Caplow, 1954). We attempt in this review to define the boundaries of the "sociology of labor markets," to indicate the central problems in this area and to evaluate critically the contributions made. Finally, we suggest the future directions of research in this area.

The concept of "labor markets" has a large number of connotations. It has been used to denote geographical areas or occupational and industrial groups, as well as groups of workers defined by ethnicity, race, sex, and levels of education and skill. We define labor markets abstractly, as the arena in which workers exchange their labor power in return for wages, status, and other job rewards. The concept, therefore, refers broadly to the institutions and practices that govern the purchase, sale, and pricing of labor services. These structures include the means by which workers are distributed among jobs and the rules that govern employment, mobility, the acquisition of skills and training, and the distribution of wages and other rewards obtained contingent upon participation in the economic system.

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KILLWORTH, Peter D. (Cambridge) and H. Russell BERNARD (Florida) 1979. "A Pseudomodel of the Small World Problem." _Social Forces_ 58 (Dec.)

A model is presented of the decision-making process used by intermediaries in small world experiments in the United States. This involves allocating each of the population of the U.S. to one of 16 categories; the membership of each population is a function of the target in the small world experiment. This is shown to be equivalent, for modeling purposes, to a Markov process with 16 states.

The Markov transition probabilities are derived partly from reverse small world data and partly by guesswork, but using a few disposable parameters as possible (3). Statistics of chain lengths from various types of starter (e.g., those far from the target, those in the target's occupation, etc.) are derived, and compare favorably with observations. The possibility of incompleted chains is included by allowing a constant probability of loss at every step in the chain. Again, there is good agreement with most observations.

How such a model might be validated by suitable observations is discussed; in particular, a set of experiments is described which should produce a great deal of additional information about the small world experiment.

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KONDA, Suresh L. and Shelby STEWMAN (Carnegie-Mellon) 1980. "An Opportunity Labor Demand Model and Markovian Labor Supply Models: Comparative Tests in an Organization." _American Sociological Review_, 45 (April): 276-301.

In this paper we comparatively test three models of individual mobility in an organizational internal labor market. The data are on a police work force and its managerial staff. Two of the models are Markovian: the third. a vacancv model. In each model two tvpes of decision-makers are postulated—managers selecting individuals for promotion and workers deciding to stay or leave. Individuals are distinguished by seniority within each grade. The vacancy or labor demand model's predictive capability was consistently betten than either Markovian model—for long (10 years) or short (3-5 year) term forecsts.

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LANDA, Janet T. (Toronto) 1979. "The Economics of the Ethnically-Homogeneous Middleman Group: A Low-Cost Club-Like Economic Organization for Economizing on Contract-Enforcement and Information Costs." _Institute for Policy Analysis, University of Toronto, Working Paper No. 7924._

The interesting question arises: How do traders cope with the problem of contract-uncertainty in an environment where the legal framework is non-existent or poorly developed? The paper develops a theory of the ethnically-homogeneous middleman group (EHMG) using a Property Rights-Public Choice approach as well as drawing on the economics of signalling and screening as developed by Michael Spence. Because the concept of the "culturally/ethnically homogeneous group" is central to sociology and anthropology, our theory of the EHMG must of necessity cross disciplinary boundaries to establish links with these two sister disciplines. In particular, our theory will use certain ideas and concepts from the work by Marshall Sahlins and Lewis Henry Morgan.

Section I of the paper develops a theory of the emergence of the EHMG as a result of the individual choice, of many interdependent traders, of his network of personalistic exchange relationships. The theory is based on an extension of Coase's theory of the firm, Buchanan's theory of clubs, and also incorporates the concept of "social distance" as developed by Marshall Sahlins in his work on primitive exchange. Section II of the paper develops a theory of the Confucian code of ethics, embedded in kinship/ethnic relations, as a functional equivalent to the law of contracts. Section III develops a theory of the EHMG as an efficient institutional arrangement for economizing on information costs in an environment characterized by contract-uncertainty and imperfect information. Central to the theory is that the "calculus of relations" is an informationally-efficient screening device for acquiring information regarding the trustworthiness of a potential trading partner. Section IV will show how our theory of the EHMG establishes links with the Property Rights-Public Choice literature, with the economics of signalling and with sociology and anthropology. The final section will suggest some implications of our theory for further research.

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LASLETT, Barbara (Southern California) 1980. "Beyond Methodology: The Place of Theory in Quantitative Historical Research." American Sociological Review, 45 (April): 214-228.

This paper analyzes the relationship between theory and methods in that body of research that has come to be called "the new social history." First, an argument is made that the quantitative analysis of individual-level data that characterizes much of what is new in the recent sociohistorical literature is not only a methodology for conducting empirical research but also embodies an implicit theory of social organization that is both quantitative and individual. The power of such a theory to explain social change is limited, however, not only by technical problems associated with measurement and sampling error in historical research but also by the absence of an explicit causal component in the model. An alternative perspective, based on Marx's materialist theory of history, and which, it is argued, overcomes these limitations, is then presented. Empirical findings from research on the family in nineteenth century Los Angeles and Duncan's discussion of structural equation models, are used to illustrate how different theories of social change might be empirically tested.


LAUMANN, Edward O. (Chicago) and Peter V. MARSDEN (North Carolina-Chapel Hill) 1979. "The Analysis of Oppositional Structures in Political Elites: Identifying Collective Actors." American Sociological Review, 44 (October): 713-732

In this paper we propose a theoretical rationale for characterizing oppositional structures in political elites. Concepts currently used in the study of political conflict suffer from serious theoretical and empirical deficiencies. We therefore introduce the concept of a collective actor, which we treat as an elementary analytic unit in the study of conflict structures in elite systems. We then develop a set of spatial models describing the alternative forms of oppositional structure that have received attention in the literature. Finally, we attempt to demonstrate the utility of our approach in a comparative analysis of two quite different community elite systems.


LENOIR, Timothy (Arizona) 1979. "Quantitative Foundations for the Sociology of Science: On Linking Blockmodeling with Co-Citation Analysis." Social Studies of Science 9: 455-80.

In blockmodeling and co-citation analysis recent studies of scientific specialties and research areas have hit upon two new quantitative methods of investigating the cognitive and social structure of science. After examining the assumptions upon which these techniques are based and the objections have been levelled against them, this paper discusses the potential for linking the two methods in order to provide a descriptive foundation for the construction of a sociology of scientific knowledge.


LI, Peter S. (Saskatchewan) 1979. "A Historical Approach to Ethnic Stratification: The Case of the Chinese in Canada, 1858-1930." Canadian Review of Sociology and Anthropology 16(3): 320-332.

While status attainment models have made important contributions in challenging the cultural approach to ethnic stratification, a substantial portion of ethnic inequality remains unexplained. Part of this gap may be filled by examining the historical process that produces those market conditions which restrict the participation of an ethnic group in the labour market.

This paper traces the experience of the Chinese in Canada between 1858 and 1930, and argues that the occupational choices of Chinese were largely constrained by market conditions, such as the demand for cheap labour and the development of institutional racism. The emergence of a split labour market and a casual Chinese labour force may be viewed as consequences of institutional racism, while the rise of ethnic business, a response to a hostile environment. The case of the Chinese illustrates the efficacy of historical approached in ethnic stratification.

LIN, Nan (SUNY-Albany), Alfred DEAN (Albany Medical College) and Walter M. ENSEL (SUNY-Albany) 1979. "Constructing Social Support Scales: A Methodological Note." Paper presented at the Conference on Stress, Social Support and Schizophrenia, Sept. 24-25, 1979, Burlington, Vermont.

The purpose of the paper is three-fold. First, it will identify the essential research tasks in the efforts to link social support and schizophrenia. Secondly, it will describe some of the efforts currently being made to develop reliable and valid measures of social support in the context of the stressor—illness model. And, thirdly, it will suggest directions and issues for future research on social support and schizophrenia. It should be noted that our own research efforts have concerned general psychiatric and physical illnesses rather than schizophrenia. Several authors have pointed out that social factors and stressors may be differentially linked to schizophrenia and other forms of psychiatric illnesses (Paykel, 1974; Mechanic, 1972). Thus, the specific data we present may or may not be applicable to schizophrenia. An attempt will be made, however, to show how the various approaches taken here may have implications for researchers interested in the relations between social support and schizophrenia.

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LIN, Nan (SUNY-Albany), Walter M. ENSEL (SUNY-Albany), Ronald S. SIMEONE (SUNY-Albany) and Wen KUO (Utah) 1979. "Social Support, Stressful Life Events, and Illness: A Model and an Empirical Test." Journal of Health and Social Behavior, 20 (June): 108-119.

The effects of social support and stressors (stressful life events) on illness (psychiatric symptoms) are examined in a model with data from a representative sample of the Chinese-American adult population in Washington, D.C. The analysis shows that, as expected, stressors are positively related to the incidence of psychiatric symptoms, and social support is negatively related to psychiatric symptoms. Further, the contribution of social support to predicting symptoms is greater in magnitude than that of stressful life events. When marital status and occupational prestige are incorporated into the model, the significant (negative) contribution of social support to symptoms is not reduced. Implications for the theoretical development of a sociomedical theory of illness are discussed.

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LINCOLN, James R. (Indiana, Bloomington) and Gerald ZEITZ (SUNY, Stony Brook) 1980. "Organizational Properties from Aggregate Data: Separating Individual and Structural Effects." American Sociological Review, 45 (June): 391-408.

In this paper, we argue that aggregate measures (means computed on distributions of individual scores) may be valid indicators of organizational properties which also enable an investigator to determine whether statistical relations among organizational measures arise from organization-level, as opposed to individual-level, causal processes. We review certain statistical aggregation issues as these pertain to organizational analysis, and we propose Hauser's path analytic model of analysis of covariance as a device for separating individual and structural effects. These methods are then applied to data gathered in a survey of 20 social service organizations. We specify and estimate a causal model wherein administrative intensity, lateral communications, and decentralization of decision making are endogenous variables. We find that a number of "total" effects on these properties mask quite different- and in some cases contradictory-processes at individual and organization levels. Among other inferences, we suggest that the organizational- and individual-level influences we observe on decentralization raise questions regarding certain widely accepted interpretations of this property. We recommend that analysts working with aggregate measures adopt similar procedures in order to fully exploit their data for the insights that may be gained into multilevel organizational processes.

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Two papers by,

LOMNITS, Larissa Adler and Perez-LIZAUR. "The History of a Mexican Urban Family." Journal of Family History 3 (Winter, 1978): 392-409.

"In this paper we have examined kinship in a Mexican urban setting, among a descent group with a distinct entrepreneurial orientation. We have followed the evolution of this kinship network over a period of more than a century, and we have attempted to derive some theoretical conclusions about kinship in modern urban societies.

Nonunilineal kinship systems in complex societies are lacking in well-defined sets of rights and obligations between kin, such as are normally found in unilineal societies. Instead, there is a tendency

to construct a Family ideology which rationalizes solidarity among relatives by emphasizing a certain set of characteristics as distinctive and supposedly unique Family values. Members who conform to the requirements of the Family ideology have access to Family resources in terms of personal, economic, political, and social advancement; those who fail to conform are penalized by withdrawal of kinship recognition. Thus, to the extent that kinship translates into social interaction it may be understood in terms of networks or fields of exchange among socially recognized relatives. Kinship relations need to be activated through relations of exchange in order to develop and persist...

The intensity of exchange between kin is not random. It is conditioned by a set of physical, economic, ideological, and psycho-social factors, as well as by the implementation of previous exchange relations. In other words, the implementation of an exchange relation not only places a relative on ego's cognitive map of kindred: it also situates the relative at a greater or lesser social distance in relation to ego. Exchange may be carried even beyond ego's death through the bequeathing of legacies, and indirectly through the incorporation of deceased members into the Family lore."

"Kinship Structure and the Role of Women in the Urban Upper Class of Mexico." Signs 5 (Autumn, 1979): 164-68.

A report of research on the kinship structure of an upper-class family in Mexico City that ranges over 5 generation of men and women, including 118 nuclear families. "The relative intensity of the flow of exchanges determines the strengths of the kinship relation....Economic linkages with the family enterprises appear to be a key factor in the persistence of family coehsion." Much information is transmitted over the telephone. Women are important contributors of capital and exchangers of information. "Kinship relations in the upper class of urban Mexico are conditioned by the structure of a social network based on the flow of information, goods and services among socially recognized relatives. Mutual recognition as relatives is based on this flow of exchange and is reasserted continually in the arena of family rituals, where women played and still play a prominent part."

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MILLER, Jon (Southern California). "Access to Interorganizational Networks as a Professional Resource." American Sociological Review, 45 (June): 479-496.

Six social service delivery systems for juvenile offenders were structured as interorganizational resource networks on the assumption that this would facilitate the development of a firm community base for their activities. The access that individual practitioners had to these program networks was seen theoretically as a measure of their integration into a larger social collectivity, a conceptualization that tied the analysis to a Durkheimian view of social structure. The specific hypothesis that was tested was that a strategic network position would be associated with more extensive professional ties to important institutions and decision-making centers in the surrounding community. In four of the six programs the hypothesis was confirmed; network centrality, measured sociometrically, was in fact a better predictor of the participants' community contact and community activism than their personal attributes, the technical resources and skills they brought to their work, or the formal status and autonomy they had achieved in the agency that employed them. In one of the two remaining programs, the hypothesis was not confirmed and, in the other, a reversal was evident: individuals with central network positions were less involved in the community than those who were relatively isolated from the network. The results are offered as evidence of how social network analysis can bridge levels of inquiry and provide new ways of approaching questions derived from traditional sociological theory.

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MILLER, Jon (Southern California), James R. LINCOLN (Indiana) and Jon OLSON (Akron). "Rationality and Equity in Professional Networks: Gender and Race as Factors in the Stratification of Interorganizational Systems." (Unpublished Paper).

Rationality and equity are important principles in the theory and legitimating symbolism of bureaucracy. As we use the terms, rationality refers to a reward and resource allocation system based on technical qualifications, and equity denotes a single rule for apportioning rewards to investments for all participants. Taken together, these two principles account for the leveling effect on social differences posited by Weber. A deduction from this point of view, namely, that organizational system will neither reinforce nor create inequality based on gender or race, was examined with data provided by the members of six multiagency social service delivery systems. The dependent variable was access to the interorganizational networks of professional exchange that tied together the agencies in these systems. On the average, men and women, whites and non-whites had equal access to these networks. However, their investments and qualifications were related to this access in quite different ways, indicating that there was not a

single resource allocation rule in operation. For white men, formal authority was the key to a strategic network position but education, unexpectedly, was a handicap. White women could also rely on authority, though less so than men, but for non-white women education was the major factor. The most surprising finding was that for non-white men, none of the indicators of professional qualifications was a good predictor of network access. It is not clear whether these complicated findings indicate sex and race-based discrimination, but at the least a complicated process of negotiation for advantages among the participants must have been in operation.

MILLER, Nicholas R. (Maryland, Baltimore County) 1980. "A New Solution Set for Tournaments and Majority Voting: Further Graph-Theoretical Approaches to the Theory of Voting." American Journal of Political Science 24 (February).

The Condorcet, or minimal undominated, set of proposals has been identified as a solution set for majority voting. Unfortunately, the Condorcet set may be very large and may include Pareto-inefficient proposals. An alternative solution set is proposed here: the "uncovered set," from which every other proposal in the tournament representing majority preference is reachable in no more than two steps. It is shown that this set has a number of desirable properties, and that several important voting processes lead to decisions within it. This article extends some earlier work by further applying concepts and theorems from the theory of directed graphs to characterize and analyze the structure of majority preference.

MULLINS, Patrick (Queensland). 1979. "The struggle against Brisbane's freeways: 1966-74." International Journal of Urban and Regional Research, 3 (Dec.): 542-52.

This paper examines structural conditions which generated resistance to Brisbane's system of express-ways and freeways and , in particular, distinguishes between elements restraining protest after plans were introduced in 1966-67 and the circumstances producing the strident action of the 1973-74 period when extensive parts of the system were postponed. These strikingly different responses will be seen to result form changes within Australian capitalism and its pattern of urban and regional development, where a political watershed, dating around 1970, divided the last decade of the post-war boom as a period of surprisingly little urban and social struggle, and the early 1970s when accumulating economic and urban contradictions resulted in significant contestation within both Australia and its cities.

NEWBY, Howard (Essex and Wisconsin) 1979. "Urbanization and the rural class structure: reflections on a case study." British Journal of Sociology, 30 (December).

Since 1970 I have been involved in the investigating social change in rural England, first through a study of farm workers; then later by way of research into the changing situation of farmers and landowners. In this paper I want to reflect upon some of the results of this research, thereby allowing myself to draw together a number of issues which have hitherto been considered separately. The thematic focus of this paper will be the impact of 'urbanization' on the rural social sturcture. By 'urbanization' I do not, of course, mean the physical development of towns and factories where only farms and fields once stood, but the movement into the countryside of an urban population - commuters, second-home owners, retired couples - whose present or past employment is located in towns and cities rather than locally in rural areas. Their arrival in the countryside, particularly since the Second World War, has ensured that English rural society is no longer entirely, nor even predominantly, an agrarian society. Indeed it is arguable that the single most important social change to have occurred in the countryside in recent years has concerned this changing social and occupational composition of its population. This change has not been entirely ignored by sociologists. However, there has been no attempt to analyse systematically the consequences of these changes in so far as they affect the life-changes of the local, predominantly agricultural, population.

This paper represents, in a very schematic and discursive way, a modest beginning to this task.

NIELSEN, François (Chicago) 1980. "The Flemish Movement in Belgium After World War II: A Dynamic Analysis." American Sociological Review, 45 (February): 76-94

This paper argues that two theoretical perspectives which have been used to explain resurgences of ethnic solidarity in modern societies, the reactive ethnicity model and theories of solidarity based on mechanisms of competition between groups for resources, are based on sets of incompatible assumptions and lead to opposite predictions with respect to the social circumstances under which ethnic resurgences occur in modern societies. Predictions of the reactive ethnicity and competition theories are tested by using as an indicator of ethnic solidarity the vote for the Flemish movement in Belgium after World War II, measured at the canton level. Hypotheses about the social bases of support for the Flemish movement are incorporated into a dynamic model of political mobilization represented by linear differential equations. The differential equations model is estimated using a pooling of cross-section and time-series data technique which is designed to correct for both the autocorrelation of disturbances and heteroscedasticity. Results with respect to the social bases of support for the Flemish movement reveal positive effects on ethnic solidarity of income and employment in the tertiary sector, no effect of employment in the primary sector, and a negative effect of industrialization. Overall, the empirical analysis lends support to the competition theories of solidarity and disconfirms the reactive ethnicity model. The dynamic nature of the mobilization process is also found to differ systematically across parties.

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OUCHI, William G. 1980. "Markets, Bureaucracies, and Clans." Administrative Science Quarterly 25 (March).

Evaluating organizations according to an efficiency criterion would make it possible to predict the form organizations will take under certain conditions. Organization theory has not developed such a criterion because it has lacked a conceptual scheme capable of describing organizational efficiency in sufficiently microsopic terms. The transactions cost approach provides such a framework because it allows us to identify the conditions which give rise to the costs of mediating exchanges between individuals: goal incongruence and performance ambiguity. Different combinations of these causes distinguish three basic mechanism of mediation or control: markets, which are efficient when performance ambiguity is low and goal incongruence is high; bureaucracies, which are efficient when both goal incongruence and per- formance ambiguity are moderately high; and clans, which are efficient when goal incongruence is low and performance ambiguity is high.

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Two papers by,

PATTISON, Philippa E. (Melbourne). "Stability and Robustness of the Joint Homomorphic Reduction of Two Semigroups." (Unpublished Paper).

An analysis of the robustness of the semigroup of two particular data sets has led us to pose two important and associated theoretical questions, namely how one may make small changes to a blockmodel without effect upon its semigroup and how one may construct all blockmodels with a given semigroup. The resolution of the two questions, the second of which is a more general (and more difficult) version of the first, would supply the detailed information with which we could assess both the robustness and the adequacy of the semigroup representation and its adequacy. The foregoing analysis demonstrates, at least, that the answers to those questions may initially be sought for blockmodels with a small number of blocks and also, hopefully, that they deserve our efforts to find them.

"Equating the 'Joint Reduction' with Blockmodel Common Role Structure: A Reply to McConaghy." (Unpublished Paper).

I will argue that the sharply contrasting constructions for the "common structure" of two multiple networks proposed by Boorman and White or by Breiger and me, on the one hand, and by McConaghy or by Bonacich, on the other, stem from quite distinctive interpretative emphases for the single population case.

The use of homomorphisms in describing the structure of a semigroup is the key difference between the approaches of McConaghy and of Boorman and White, and its interpretation, or, indeed, its interpretability, the primary point of contention.

The "meaning" of a relation is at least partially defined by the context in which it occurs: Associating a relational pattern with a particular image permits speculation about the nature of the relations themselves. Hypothesizing of this kind was exactly the task undertaken by Breiger and Pattison (1978) in our analysis of the joint structure between two community elites. A more thorough substantive analysis of the common content of those elites would have examined the particular relational domains from which that common structure derived. The analysis proposed there, however, does provide an illustration of how relational

patterns, corresponding in that case to those suggested by Granovetter (1973) for strong and weak ties, may be translated into equational terms and how the existence of that collection of equations in some concrete data set may be reinterpreted in the light of the content of known generators of that collection. In this way, hypotheses about content are generated, demonstrating how "the cultural content of the social structure becomes a question for empirical research rather than a matter of definition" (White, Boorman and Breiger, 1976:770).

For the reasons propounded above, therefore, it is suggested that while both proposed constructions for the "common structure" of two relational systems are defensible in theory, the JNTHOM is potentially more useful in practice. The two different constructions follow from two distinct views on the nature of the features comprising a given semigroup. It has been argued that the JNTHOM is the preferred representative of "common structure" precisely because it derives from a description of the semigroup in terms of features (images) with concrete relational referents in the generating blockmodel.

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PATTISON, E. Mansell (Med. Coll. Georgia), Robert LLAMAS and Gary HURD (California-Irvine). 1979. "Social Network Mediation of Anxiety." Psychiatric Annals 9 (Sept.): 474-82.

This article explores the clinical significance of social networks as a major variable in the mediation of anxiety. We propose that the arousal of anxiety, the modulation of anxiety, and the resolution of anxiety is critically related to the social environment -- and expressly to the social unit that we term the "personal psychosocial network."

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PINNARD, Gabriella and Enrico PUGLIESE (1979). "Changes in the social structure of southern Italy." International Journal of Urban and Regional Research, 3 (Dec.): 492-515

This paper on changes in the social structure of southern Italy will deal with three different types of problem. The first concerns the evolution of the dominant social bloc (understood as the alliance among sectors of the dominant class) and its internal structure. The second concerns the evolution of the relations between city and countryside in the south and the role played by urban society as it relates to the process of industrialization in the region and the intervention of the public sector in the economy of the south. The third refers primarily to the composition of the subordinate classes, taking into consideration both the emergence of social strata that could be brought into alliance with the dominant bloc and, more generally the origins and diverse facets of transformation in the socio-occupational structure.

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RAU, William C. (SUNY-Albany). "The Tacit Conventions of the Modernity School: An Analysis of Key Assumptions." American Sociological Review, 45 (April): 244-260.

This paper examines a number of conventions which guide current research into psychological modernity. The key assumption is unidimensionality, an assumption which underlies recent investigations into the convergent and discriminant validity of various modernity scales. I show that this assumption takes for granted what needs to be proven and, therefore, violates the null hypothesis axiom. Using data from a five nation study of individual modernity, I statistically examine this assumption and demonstrate its inappropriateness to modernity research. I close with an interpretation of patterns of modernity in the five nations. These patterns have been derived from factors solutions that meet statistical tests of dimensionality. The results suggest that existing modernity data should be reanalyzed.

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SHULMAN, Norman (CMHC, Ottawa) and Robert E. DRASS 1979. "Motives and Modes of Internal Migration: Relocation in a Canadian City." Canadian Review of Sociology and Anthropology 16 (3): 333-342.

Continuing migration within Canada is seen as an important factor for many aspects of social organization. A sample of 453 internal migrants provides data on the characteristics of migrants, their reasons for moving, and the effect of having different types of connections in the receiving community. By utilizing a new approach to locating migrants, very recent migrants were interviewed about their reasons for moving and their experiences in relocating in the target area. While several patterns established through previous research are corroborated, two apparently discrepant findings appear. These are explained when analysis of the data is refined. Most migrants are found to move under some auspices. The availability and nature of a network of local connections are found to affect the ways in which migrants deal with moving and relocating.

SMITH, Christopher J. (Oklahoma) 1978. "Self-help and Social Networks in the Urban Community." Ekistics, 268 (March/April)

This paper recommends an alternative orientation for geographers, anthropologists, sociologists and other interested in applied social and urban issues. Instead of studying problems, particularly their incidence and their spatial distribution, it suggests that at least some emphasis be placed on nonproblem behavior, and on the positive helping that occurs daily in a multitude of self-help groups and lay social networks within the urban community. To illustrate the importance and the functioning of social networks, one group of urban dwellers, recent rural-to-urban migrants, was selected for a conceptual case study. In adapting to city living, migrants face unusually severe problems. They must quickly establish a network of supportive people, services, goods, and information--to draw upon in times of need. Migration is just one urban situation to which a study of social networks can be applied. Although urban analysts will be arriving somewhat late on the social networks scene, many research questions remain unanswered, for example: Who helps and who is helped? How is information circulated from those who are providing to those who are in need? Where do the helpers and the helpees live in relation to one another? How do distance, relative location, and migration affect the operation of the helping network and the overall strength and cohesivenes of ties?

Unhappily, in spite of all the research conducted on social problems, relatively little is known about why they occur and why they occur where they do. We have little to lose, therefore, by recommending that some within our ranks begin to ask why problems do not occur in certain places. Geographers will probably continue to map the distribution of social problems occurring in urban communities. Unfortunately, their research efforts too often stop there, perhaps, at best, with a recommendation that help or more often money and other tangible resources, should be channeled into the problem-rich, service-poor neighborhoods of the city. Too often such deterministic spatial planning fails because we know very little about the behaviors of people experiencing problems on a day to day basis, and about the way they search out and use the naturally occurring helping networks within their community. This paper suggests some avenues that researchers might travel along in the search for such knowledge.

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TAYLOR, Bernard W. III and Arthur J. KEOWN (Virginia Polytechnic Institute) 1980. "A Network Analysis of an Inpatient/Outpatient Department." Journal of the Operations Research Society 31: 169-79

In recent years, numerous models have been developed for the analysis of health care systems and facilities. However, for the most part, these models are directed at specific, narrowly defined problem areas or subsystems and do not provide a framework for a comprehensive analysis of a total health care system. Alternatively, Q-GERT, a recently developed network modelling and simulation tool does provide the capability for total health care system analysis. In this paper, the applicability of Q-GERT to health care systems is demonstrated via a description of a network model of a university infirmary. Output from the simulation of the network model provides operating statistics for various systems parameters including service times, queue lengths, server utilization, etc. Potential applications of models results are demonstrated and discussed.

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TEPPERMAN, Lorne (Toronto) 1979. "Status Inconsistency in the Toronto Elite of the 1920s." Pp. 125-40 in Social Stratification: Canada, edited by James Curtis and William Scott. 2 ed. Scarborough, Ont.: Prentice Hall.

Because the types of inequality that make up stratification are so tightly connected to one another, knowing where to begin and analysis is often difficult. But must the choice of a starting point be largely arbitrary? This paper is an attempt to unravel the skein of variables that, together, constitute social position in a stratification system. We shall look at a group of elite people who stood at the top of Toronto society during the 1920s. They enjoyed material prosperity, held positions of some authority, and had social eminence, even fame. We shall try to understand how they came to attain this consistency or crystallization in amounts of wealth, authority, and prestige; and how some of their statuses (or assets) might have been used to improve or purchase others. We shall attempt to discover which aspects of stratification are more fundamental and which more superficial to the attainment of a high social position.

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TICHY, Noel (Columbia) and Charles FOMBRUN (Pennsylvania) 1979. "Network Analysis in Organizational Settings." Human Relations 32 (11): 923-965

This article sets out to reinforce and further develop an emerging paradigm: social network analysis, which represents social structure in terms of relationships (ties) between social objects. Not all the social objects are directly linked, and objects may be connected by multiple relationships of affect, influence, information, or goods and services. Network analysis deals with the types and patterns of relationships, and the causes and consequences of these patterns. The article applies the paradigm to the study of organizational structure by both developing theoretical constructs and presenting methodology for carrying out social network analysis in organizations. An analysis of three organizations form the Aston Study is presented using social network analysis to test propositions about differences between mechanistic and organic structures.

TICHY, Noel M. (Columbia), Michael L. TUSHMAN (Columbia) and Charles FOMBRUN (Pennsylvania) 1979. "Social Network Analysis for Organizations." Academy of Management Review, 4 (4): 507-519.

This article introduces the social network approach--its origins, key concepts, and methods. We argue for its use in organizational settings and apply the network approach in a comparative analysis of two organizations.

USEEM, Bert (Michigan) 1980. "Solidarity Model, Breakdown Model, and the Boston Anti-Busing Movement." American Sociological Review, 45 (June): 357-369

"Breakdown theorists" assert that actors who are weakly integrated into their community and experience discontent are likely to join a protest movement. These analysts also maintain that disorganization increases discontent. "Solidarity theorists," on the other hand, argue that isolated individuals are less likely to protest than others and that discontent is unrelated to protest. Data from a survey of Boston residents provide support for the solidarity theorists' argument that social cohesion increases protest. The Boston data, however, support the breakdown theorists' hypothesis that discontented individuals are more likely to protest than others. Finally, the date undercut the breakdown theorists' hypothesis that disorganization increases discontent.

WIGAND, Rolf T. (Arizona State) 1980. "Selected Social Implications of Direct Satellite Broadcasting." (an invited paper submitted to the UNESCO International Social Science Council).

Direct satellite broadcasting (DSB) can introduce sophisticated telecommunications to any area on earth--no matter how remote and sparsely populated--more quickly and potentially less expensively than terrestrial systems. This potential has aroused considerable interest in DSB. Direct-to-home broadcasting by satellite has become a technical reality. This paper explores the state of the art of DSB and then focuses on potential future developments in this rapidly developing field. More specifically, the author addresses selected social implications of DSB with respect to the possibilities for governmental, administrative, private and commercial communications. In addition, the potential effects and uses such possibilities might have are explored. These considerations are seen in the light of worldwide and regional communication, direct-to-home reception, and the future impact on word, data and management systems. Lastly, various planned technological developments and future DSB applications as well as policy implications are discussed.

The author stresses the point that with the advent and possibility of widespread use of DSB, policy makers have another opportunity to reexamine the role of broadcasting and other satellite-related developments in terms of function and structure as well as in regard to DSB's role in national and international development.

ZIEGLER, Suzanne (Toronto). 1979. "Demographic Influences on Adolescents' Cross-Ethnic Friendship Patterns." Toronto: Child in the City Programme, University of Toronto. Report No. 4.

This paper uses a field method approach to explore the social world of Anglo-, Chinese- and Italian-Canadian children in four schools and neighborhoods in Metropolitan Toronto, and finds some significant demographic correlates of cross-ethnic and cross-racial friendships formation which indicates that, in the locales studies, opportunities for contact are positively and significantly related to friendship formation; and that, contrary to earlier American findings, own-group preference does not increase as the size of the out-group increases.

# COURSE OUTLINES

*SOCIAL NETWORK ANALYSIS: "CORE AREA" READING LIST*

The University of Toronto Sociology Department requires that doctoral students pass "comprehensive exams" in two out of nineteen "core areas." Faculty members in each area compile a list of key readings which students are required to know.

This core area reading list does not pretend to be definitive or comprehensive. It very much reflects the strengths, weaknesses, interests and enthusiasms of Toronto faculty and students (compiled by Stephen Berkowitz, Bonnie Erickson, Nancy Howell and Barry Wellman).

It might be fun to try to compile a broader, INSNA-based list. Connections would like to publish readers' suggestions (anonymously or signed) for additions or deletions to this reading list.

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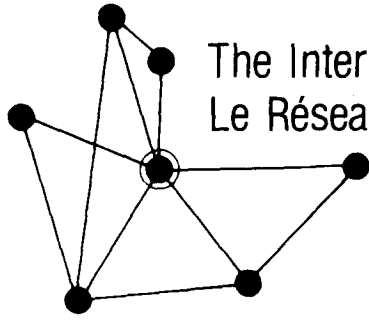
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DISCIPLINARY AFFILIATION (circle one)

anthropology communication science community development computer science economics education geography history information science management studies mathematics medicine planning political science psychiatry psychology public health social work sociology statistics other _____

KEYWORD DESCRIPTORS OF WORK (circle relevant items)

authority flows children community criminology demography dynamic changes educational elites epidemiology ethnicity exchange systems friendship gerontology health information flows inter-generational inter-organizational kinship macro-structure mental health methods migration occupational organizational phenomenology political recruitment religion sex differences social services stratification support survey research teaching technological impacts other _____

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