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Networking Network Analysts: How INSNA (the International Network for Social Network Analysis) Came to Be

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Network Analysts Need Networks to Communicate: A Personal Account(2)

Some time ago, Steve Borgatti — then INSNA coordinator and Connections editor — asked me to write a twentieth-anniversary account of the founding of INSNA. He wanted it from my perspective as the guy who started it. However, current diversions kept delaying reminiscing about the past. I finally found time at the paradisaical Italian Rockefeller Center retreat in Bellagio (Italy, not Las Vegas) to do this. The timing is good, as INSNA approaches its twenty-fifth anniversary in 2002.

In 1974-1975, Bev Wellman and I were eager to live in England during my first sabbatical. Based at the University of Surrey (me) and the Laban Art of Movement Centre (Bev), we traveled throughout Britain. A curious thing happened when we visited scholars we had heard about and corresponded with.(3) We found ourselves to be giving each person news about what other British and North American networkers were doing. Social network analysis was just getting under way as a self-conscious discipline, and there had been little contact between mainly-sociological North Americans and mainly-anthropological Britons. Our travels formed frail but important threads of connectivity.

There had to be a better way than depending on the semi-random walks of itinerant sabbatarians. Soon after we returned home, in 1976 I began canvassing interest in starting a network of networkers. There was enthusiasm. I decided the best way to start something was to actually start something. I asked many of my North American and European connections to form a legitimating, recruiting Advisory Board, with a balance between American and nonAmerican scholars and between disciplines. (In practice, this meant that American sociologists were proportionately under represented in comparison to their membership numbers.) I think everyone I asked said "Yes."(4)

Expectancy was in the air: a feeling that we were onto something new and important, and that our time had come. Working with the Advisory Board, we used our Rolodexes, networks, and newsletters to circulate membership forms widely. The resulting International Network for Social Network Analysis began in the Summer of 1977 (the date of Connections' first issue), with the express purpose of spreading news about research and people. I tried to keep things loose and informal: I called it a "Network" (instead of a "Society" or "Association"), I styled myself "Coordinator" rather than

"President" or "Chairman," and Connections was most definitely not a journal and much more than a newsletter.

Networking Torontonians

Our Toronto base may have made it more of a hospitable home for scholars outside of the U.S. I believe that thinking structurally is easier if one is based outside of the U.S. imperium. Dominant states, people and organizations tend to evaluate the world in social psychological terms: "Do they like us? Have we won their hearts and minds?" By contrast, those in dependent situations are more apt to see the world as composed of linked chains of asymmetric relationships — who influences/controls whom? — rather than seeing the world as a set of voluntarily-chosen, egalitarian, symmetrical relationships.

The Toronto Department of Sociology was a hotbed of network analysis then. (We called it "structural analysis" to be more intellectually inclusive, reaching out especially to the social movements, world systems, and international/interregional dependency folks.) In 1965 Toronto had grabbed Chuck Tilly, who soon brought Bill Michelson and myself to join him. As a result of chain migration, a pride of Harvard graduate student missionaries soon migrated north from the then-center of network thought. In a short while, Toronto had a diverse, smart, and mutually supportive set of faculty members: Bonnie Erickson, Harriet Friedmann, Nancy Howell (all from Harvard), Janet Salaff (from Berkeley) and Bev Wellman (Univ. of Toronto) are still at Toronto. Michel Bodemann (Brandeis) and Lorne Tepperman (Harvard) are still at Toronto, but have turned to other pursuits. Two early Toronto stalwarts have moved elsewhere: Leslie Howard (also from Harvard) is at Whittier College, and Brandeis-born S.D. (Steve) Berkowitz (my co-editor of ***Social Structures***, 1988, 1997) is at the University of Vermont. Much of our success came from enthusiastic graduate students, excited to be "Associate/Assistant Editors" and to be participating in a leading-edge intellectual movement. They did much unpaid and smart labor, especially on publishing ***Connections.***(5) Karen Anderson, Peter Carrington, Walter Carroll, Barry Leighton, and Jack Richardson. were especially key players. Most crucially, Bev Wellman has always been enthusiastically, actively and reliably there.

The Department of Sociology, University of Toronto was a hospitable early home. INSNA also received an organizational bonanza in the late 1970s - early 1980s when I founded and led the department's Structural Analysis Programme, a research centre with INSNA as one of its proudest jewels. After the department faced budgetary constraints and an unenthusiastic chairman, INSNA moved to the university's Centre for Urban and Community Studies where it thrived until I handed it over to my successors in 1988.

An Informal Network

Wanting to give INSNA quick momentum, I just started it without a constitution or a structure. It had an informally-recruited advisory board and a small checking account. Legally, I owned it as a small business. No muss, no fuss. In practice, we were non-profit. I eventually passed the $8,000 surplus treasury on to my successors and never took a salary. I kept dues low (US$7/Cdn$7 including a subscription to ***Connections***) and cadged volunteer labour from graduate students and colleagues to find (and in those days, type!) abstracts, do ***Connections*** layout, and stuff envelopes. For each issue, Bev Wellman and I *schlepped* four big mail bags to the post office.

In hindsight, just doing it is a great way to start a scholarly network and a more difficult way to keep it going. At the outset, starting INSNA successfully was most important. I have seen several other scholarly networks spend years attempt to write perfect constitutions, and in the process losing so much enthusiasm and momentum that they never get off the ground. My thought at the start was that once we got started and people were having a good time, we could formalize our procedures. (Of course, this depends on having a founding caudillo willing to step down voluntarily.)

The difficulties? Without an elaborate structure, it was hard to get others to do any organizational work (other than the Sunbelt conference, which always ran well and autonomously). There was a tendency to "leave it to Barry". As I liked doing it, this was OK for a while. But it meant that things didn't get done, and diverse opinions didn't get offered. I also realized when I wanted to step down and it took me several years to find successors, that there was no means for institutionalized succession short of revolt (never a glimmer), a constitutional convention (too cumbersome before email), or abdication (the strategy I adopted at the end). In short, we had the same structural problems that many successful small enterprises have when they get past their start-up state (Metcalfe 1999).

An International, Interdisciplinary Network

From the outset, INSNA was international and interdisciplinary, although it had more Americans and sociologists than any other nationality and discipline. Approximately half of the members were Americans, with Canadians comprising the second largest group, and western Europeans almost all of the rest (France, [West] Germany, Italy, the Netherlands, Norway, Portugal, Spain, Sweden). There were nine members from Asia-Pacific (Australia, Japan, Israel, India) and four from Latin America (Argentina, Mexico, Peru).**(6)** Membership rates were reduced for students in the western world and free for all members working in developing countries (and later, eastern European countries with blocked currencies).

We started with approximately 175 members and rose within two years to about 300. It now has nearly 500, with perhaps 1,000 more interested hangers-on (judging by the many non-members who go to the annual Sunbelt Social Network Conference or who ask questions at its website(now "**http://www.heinz.cmu.edu/project/INSNA/**" but soon to be changed, most likely to "**www.insna.org**"). For over a decade, about 40 newbies a year have taken my "Networks for Newbies" workshop at the Sunbelt conference.

Sociologists were the largest block then as now, comprising about 40% of the total. Five to ten percent each came from anthropology, psychology, communication science, social work and political science, with one or two from community development, computer science, economics, education, geography, gerontology, history, information science, management science, mathematics, psychiatry, public health, and statistics. In recent years, membership from management science, communication science and information science has grown substantially, while psychology and anthropology has declined in proportions. (Some of the psychologists went off to form their own "personal relationships" network, founded by Steve Duck on the INSNA model.)

I quickly learned that there were more social network analysts in the firmament than my Harvard-centered life had shown me:(7) small group-niks, communication scientists principally interested in the diffusion of information, often-quantitative anthropologists, and the mathematically inclined influenced by James Coleman at Johns Hopkins University and the University of Chicago. I developed the habit of whipping off a form letter to anyone whose article or book we abstracted, saying that as INSNA members were interested in them, wouldn't they like to join the party. (After all, scholarly camaraderie and recognition are two of the main rewards of the academic life.) I developed the huckster habit of standing up at any conference I was at: I proclaimed INSNA's existence, waved a sheaf of membership application forms. I strew forms and posted signs everywhere I could. INSNA flooded scholarly newsletters with announcements of our existence and invitations to the Sunbelt conferences. I got these out in many disciplines and many countries.

Making *Connections*

Within INSNA, I created the informal journal, ***Connections***. We considered calling it Ties and Bonds (as suggested by "groupware" inventors Peter and Trudy Johnson-Lenz), but worried that it might attract the wrong audience. When I stepped down from heading INSNA twelve years later and no longer had to try to behave decorously, I re-titled my "Notes and Comments" section in ***Connections***, "Ties and Bonds."

Connections was edited and published in Toronto, with the help of Bev Wellman and student volunteers. To save money, it was stapled with a cheap cover. We published ***Connections*** three times a year, a reluctant reduction (for lack of time) from a quarterly. I am convinced that ***Connections*** must appear frequently, and lament its current twice-yearly status. It is INSNA's key source of current information, networking, community building and identity. ***Connections*** rarely received institutional subscriptions (which is where most societies make their money), because its cheap production didn't make it look like a journal.

Connections was designed to be a means of fostering intellectual and personal connectivity among network analysts. We used a variety of means to keep networkers intellectually and socially linked. ***Connections*** had lots of small news bits, meeting calendars, information about computer stuff, teaching aids, membership directories, quirky items about networking in the real world, how-to-do-it articles, literature reviews, position statements, and hundreds of abstracts. Based on my British networking experience, I thought that such information would be more useful than a "real" journal.

As I really wanted to be a journalist when I was growing up and have always been a *yenta*, creating and sustaining this style gave me great *naches*.

Anyway, we were already forming a nascent journal, ***Social Networks***, and our network missionary position demanded that we publish extensively in other journals rather than deteriorating into a self-satisfied, isolated movement. My principal regret is that we have never developed the habit of complementing formal journal papers with quick communication of early results in short research reports, either in ***Connections*** or on our Socnet email list. Perhaps our website can do this one day. The Sunbelt conference does communicate such results well, but its annual meeting is not frequent enough for rapid dissemination.

In those pre-web, pre-textbase days, the hardest and most time-consuming part of preparing ***Connections*** was identifying relevant articles and gathering their abstracts. It took more than half of the time I devoted to INSNA and most of our student assistants' time. Merely searching keywords did not provide the wide range of subject matter relevant to network analysts. My best source was to scan ***Current Contents***, a weekly compilation of journals' tables of contents. To save labor, we didn't do book reviews, but did book summaries, using information gleaned from a book's introduction, jacket blurb, table of contents and publisher's ad. This provides at least 50% of a book review's information at less than 5% of the time, labor and aggravation cost. ***Connections***' format seems to have held up nicely over time.

Connections, like INSNA itself, has always been as much a base for reaching out as *Cosa Nostra* for providing internal information, support and development. I remember an INSNA meeting in the late 1970s at the American Sociological Association conference where we said that we would reach out to other scholars rather than forming our own isolated intellectual neighborhood. (Harrison White was especially vocal about this.) We reasoned that we could have greater influence that way plus profit from a variety of intellectual approaches, substantive findings, and research methods.

Our approach has been to reach out through articles in a variety of journals and conference papers, bringing the network word to many substantive disciplines and areas, and subjecting our approach to the critical examination of diverse others. ***Socnet***, ***Connections***, and our website provide us with scope, awareness, identity, tools, and connectivity. ***Social Networks*** provides us with a vehicle for formal scholarly communication about theory, methods and findings of primary interest to network analysts.

Networkers Never Network Alone

INSNA/***Connections*** wasn't the only game in town. Networking — and network analysis — was in the air. We had a scholarly mission and a movement. Paradigms and careers were in the making. Many other things happened about then, each contributing separately and interactively to the successful institutional take-off of social network analysis.

1. The late Nick Mullins published ***Theories and Theory Groups in Contemporary American Sociology*** in 1973.(8) The book devoted a chapter to social network analysis, giving us equal-status with then heavy-duty approaches such as structural-functionalism, Marxism, and ethnomethodology. One comment probably started me thinking about INSNA even before my English hegira: Each chapter named a theory's intellectual leader (Harrison White in the social networks case) and organizational leader (position then open for social network analysis: I saw this as a career opportunity as well as a chance to do good for the scholarly world). Nick's book also put many of us on the map because it named names. Only the *cognoscenti* noted that many were Nick's former fellow Harvard graduate students. I remember well going into a tenure meeting for Nancy Howell and brandishing the page with her name on it as a leading network analyst. Not that there was much doubt, but set in cold type, it clinched the case immediately.

2. Bev and I capitalized on the holding of the World Congress of Sociology in Toronto, August 1974, to organize a parallel set of zero-cost meetings in Toronto, using space scrounged from the Department of Sociology and the Centre for Urban and Community Studies. About 75 people participated in our eight sessions. A lot of network analysts formed their first in-person ties at that time. Most of us realized that there was more to social network analysis than the little circle with whom we had gone to graduate school. Bev and I still remember, now-fondly and then-exhaustedly, the party we held for network analysts in our back yard the night we left for our aforementioned sabbatical stay in England.

3. The Torontonians organized a "New Directions in Structural Analysis" conference in March 1978, The "structural analysis" moniker signaled that we cast a wider net than traditional social network analysis. Speakers presented informal papers, with plenty of time for discussion. Out-of-Toronto participants included Grace Anderson, Steve Berkowitz, Russ Bernard, Pat Doreian, Lin Freeman, Joe Galaskiewicz, Maurice Godelier, Gerry Gold, Peter & Trudy Johnson-Lenz, Tom Koenig, Sam Leinhardt & Paul Holland, Joel Levine, Chris Pickvance, Chuck Tilly, Stan Wasserman, Harrison White and Rolf Wigand.(9)

4. The Department of Sociology took advantage of a fleeting University of Toronto opportunity to found a "Structural Analysis Programme": a visible college of twelve colleagues. Nancy Howell and I applied to start it; I was the founding director for four years. We capitalized on SAP's funds, staff, and enthusiastic colleagues and students to give INSNA a kick-start. SAP's sole employee, Susan Haggis and then Karen Anderson, became INSNA's administrator. Our working paper series and active conference participation increased network analysis' visibility. Most Torontonians became contributors to ***Social Structures*** (1988) a book of theory and exemplary case studies that I edited with then-Torontonian Steve Berkowitz.

5a. Others organized important conferences. In 1975, Sam Leinhardt (now starting up his *third* high-tech firm) brought together theory and methods people at Dartmouth concomitantly linking Chicago and Harvard folks with each other. (Holland and Leinhardt 1979 presents some concrete results of this.)

5b. Lin(ton) Freeman, Sue Freeman and Woody (Forrest) Pitts organized several social network conferences: There were four in Hawaii, December, 1974-1978, with Larry Kincaid organizing a fifth and final one in 1979. In Spring, 1980, the Freemans organized a meeting in Laguna Beach CA, near their University of California-Irvine base. In 1981, (H.) Russ(ell) Bernard and Al(vin) Wolfe started the Sunbelt Social Network conference, an annual event loosely linked with INSNA, and attended by between 150 and 300 network analysts. Traditions became quickly established:

- Most importantly: Being informal, having fun, but being serious about our work.
- Use of the term "Sunbelt" in our conference, signaling our lack of pomposity;
- Meeting in warm, sunny climates in funky places in the winter getaway month of February;
- Alternating between the American east and west coasts;
- Having only two or three colleagues do the arranging in a bureaucratically light way;
- Doing most things informally by volunteers rather than formally through committees;
- Encouraging innovative sessions;
- Letting session organizers do their own refereeing;
- Heavily relying on the self-refereeing of participants who did not want to embarrass themselves in front of their network peers;
- Running introductory and technical workshops, generally taught till now by Steve Borgatti, Katie Faust, Bill Richards, Stanley Wasserman and myself.
- Avoid sessions during PTH (the peak tanning hours between Noon and 3 PM — a great time for the informal networking that is the heart of every good conference);
- Eating well at night.
- Limiting ceremonies to an annual banquet at which a leading figure would give a keynote address.

The initial pattern has held up well, with the big change being a switch to a three-year rotation: the third year being in Europe at an attractive location. This revised pattern has helped keep the conference and INSNA truly international.

6. In addition to being a conference founder, Lin Freeman founded ***Social Networks*** in 1978, a year after INSNA/***Connections*** got under way. He has been its intrepid editor ever since, joined in 1999 by Ron Breiger as co-editor. ***Social Networks*** has been an

adventuresome, refereed, in-house, quarterly journal that publishes articles by and for social network analysts. It proudly bills itself as a "journal of structural analysis," indicating its hospitality to a range of ideas and methods. In the past year, a fledgling ***Journal of Social Structure***, edited by Lin's one-time student David Krackhardt, has appeared as an online journal.

7. Lin Freeman, who was starting a lot of things in those days, also secured a U.S. National Science Foundation grant in 1978 to set up one of the first computerized conferencing systems for scientists: a precursor of what would later transmute into the Internet. (Lin is the Original Net Surfer.(10)) Unlike the current, distributed Internet system, the EIES system we used then allowed about 25 network analysts to make a local call (to what we would now call an ISP, run by GTE) into a single server in Newark, New Jersey.(11) Our activity prefigured the great use that invisible scholars currently make use of the Internet (Koku, Nazer and Wellman 2001). Using software developed by founding INSNA board members Peter and Trudy Johnson-Lenz, EIES afforded what we would call today "newsgroups" (collective discussions for the entire group), and more selective "electronic mail" (one-to-one or one-to-many).(12) Because of the use of a single server to store all messages until the recipient retrieved, we were able to do things we cannot do today on the web: (1) EIES could cancel a misguided message after it had been sent (but before it had been retrieved): This feature eliminated many flames. (2) EIES made it easy for any participant to form and dissolve *ad hoc* discussion groups. Being on EIES gave social network analysis a certain cachet, helped our intellectual and organizational discussions, and gave me snob status when I began collaborating with computer scientists in 1990 ("What? You only started doing email in 1982!").

Evaluative research by Lin and Sue Freeman (1980) showed a J-curve distribution of participation in the computerized EIES conference. Just as in face-to-face discussions, some participated a lot; others did not. Lurking was even easier on-line than in a big conference room. Absences are hard to perceive, and it was almost impossible to notice which EIES members were only lurking or not participating at all. On-line discussion was fitful. By contrast, when scholars meet face-to-face at intermittent conferences, we have saved up over the year lots of interesting things to say to one another. Perhaps one or two good ideas is about all that most scholars can muster annually.

8. In addition to serious substantive articles and books, a variety of integrative books began appearing. J. Clyde Mitchell's pioneering edited collection (1969) was followed by others, including Paul Holland and Samuel Leinhardt (1979) and Wellman and Berkowitz (1988, 1997). David Knoke and James Kuklinski's 100-pager (1982) helped many figure out what network methods were all about; Wasserman and Faust's (1994) heavier tome magisterially provides methods and more. Steve Berkowitz did an early book-length treatise (1982) about the structural analytic approach, notable for its broad purview. John Scott has done a more recent one (1991), its reach limited by his non-involvement in the Sunbelts. Among the more specialized books, those by Rogers and Kincaid (1981), Burt (1982, 1992), Tilly (1984), Knoke (1990), and White (1992) speak to broader audiences than their titles might suggest.

9. When we began doing social network analysis, it was a black art; now it is a light grey one. ***UCINet***, begun by Lin Freeman and developed by Steve Borgatti, Martin Everett and associates, is the most widely-disseminated package for analyzing a single "whole network". Its current version runs on Windows 98, although its companion graphics program, ***Krackplot***, is still DOS-bound. Other programs have appeared and are used, including the Dutch ***GRADAP***, Ron Burt's ***Structure***, Stan Wasserman and Phillipa Pattison's ***p****, and Bill Richards' ***Negopy***, ***Fatcat***, and ***MultiNet***.(13) Most years, there are good introductory seminars to ***UCINet***, ***p**** and MultiNet at the Sunbelt conferences, and Wasserman has been running heavily-subscribed one-week summer courses for years at the University of Michigan's ICPSR (Inter-University for Political and Social Research). Although these affordable, usable, and useful programs have made network analysis do-able by the masses, the affordable availability of these usable and useful programs has obscured other aspects of network analysis:

- Because most programs analyze only one social network at a time, they are convenient to use when analyzing batches of networks, something that is done frequently by those studying personal networks of community, support and information flow. John Sonquist, myself and associates have shown some ways of using the widely distributed ***SPSS*** and ***SAS*** statistical packages to deal with such matters.(14)

- Current network analytic programs stay at one level of analysis — the network. Yet many intellectual issues profit from being able to analyze individuals and ties in relation to the characteristics of the networks in which they are embedded. Multilevel analysis offers one approach to this (Snijders 1999; Wellman and Frank 2000).

- The seductive precision of software packages has obscured the value of qualitative analyses — ethnographic, archival, etc. — to the study of organizations, communities, social movements, and world systems. To some extent, the unstatistical have avoided involvement in INSNA and the Sunbelt. However, those who do participate are welcomed and heeded, and ***Connections*** has always deliberately included such work.

Passing It On

When you start something you love, it is hard to turn it loose. I adored every day I headed INSNA for 12 years. (To me INSNA began in 1976 when I started soliciting interest, not our formal 1977 start date.) But I began to be burdened by the time it took away from getting my own research and writing done. I also realized that we couldn't be sure that INSNA was really a society until others had taken it over and run it.

Several successions later, I am comfortable. My proudest moment since starting INSNA and getting out the first ***Connections*** was when I was successfully replaced. This was the closest that I'll ever come to being a proud *Bar Mitzvah* parent. Susan Greenbaum and Alvin Wolfe, two anthropologists at the University of South Florida, agreed to share the jobs of INSNA Coordinator and ***Connections*** Editor.(15) They took over with enthusiasm and organization. I asked if I could stay on as International Coordinator and satisfy my journalistic itch by continuing to write for ***Connections*** an 8-12 page article that brings together short items that strike my interest and I hope provoke yours. They graciously agreed, as have subsequent editors and coordinators. As a compulsive magpie and contributor, I've continued to compile many of ***Connections***' abstracts and book summaries.

It has been interesting watching INSNA change since I moved from founder to *eminance grise*. We've largely kept our informal, ad hoc character, as Greenbaum / Wolfe gave way to Katie Faust / John Skvoretz (Univ of South Carolina), Steve Borgatti / Candy Jones (Boston University School of Management), and now to the long distance leadership of Martin Everett (our first "president" instead of coordinator, Greenwich University, UK), and Bill Richards (***Connections*** co-editor, Simon Fraser University, Canada) and Tom Valente (***Connections*** co-editor, UCLA, USA). Many founding stalwarts such as Russ Bernard and Lin Freeman are still active, although Clyde Mitchell has passed on, others have retired, and many have drifted elsewhere. New faces keep showing up at the Sunbelt, and what is more important, keep coming back. We're on the web and our email discussion list is lively, informative, and not too time-consuming. ***Connections*** now looks much more professional but has kept its mission and its informality.

My major concern is that we have become too formal in some ways — changing the name of our organizer from "Coordinator" to "President" — but not structured enough in other ways. Despite the explosive growth of interest in social network analysis, our membership hasn't commensurately grown in size. ***Connections*** is less timely, coming out now only twice per year. I think advice needs to come from a matrix structure of board members that would represent — and recruit — network analysts from our disciplines and our countries.

At times, I also worry how we are developing. On the one hand, I *kvell* at the proliferation of serious substantive papers and the ready availability and easy use of heavy-duty methods. On the other, I get concerned that despite the participation of so many smart people, our work has not cumulated enough or developed enough integrated theory. Why is it that many people with network analytic sensibilities do not participate? When I ask, they tell me that our methods are too hard and our scope is too narrow. Or else, they think that only a metaphoric "network" sensibility is enough. I wonder how to reach out to them so that a broad, rigorous structural analytic perspective flourishes.

Yet no founder can realistically hope that all of his foibles will become graven in immortal stone. I'm delighted that I started INSNA, that many of my ideas about how to do it have persisted, and that so many people continue to enjoy it, profit from it, and contribute to it. I am joyous every time I encounter INSNA in action — through ***Connections***, ***Social Networks***, the Sunbelt conference, the web-site, and our daily networking on and off line.

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2. This paper is dedicated to the late J. Clyde Mitchell who welcomed me to British network analysis in 1974 and continued as a friend, enthusiastic member of INSNA, and frequent contributor to Connections until his death in 1995. I also appreciate the advice, comments, editing, and continued support of Bev Wellman.

3. J. Clyde Mitchell, Chris Pickvance, and Bryan Roberts at the University of Manchester; J.A. (John) Barnes at Cambridge; Abner Cohen and Adrian Mayer at the School of Oriental and African Studies, University of London; Peter Willmott at the Institute of Community Studies, London; Ray Pahl at the University of Kent; Howard Newby at the University of Essex; Colin Bell at Aston University (Birmingham); Norman Long at Durham University; Brian Elliott, Charles Jones and Anthony (Tony) Coxon up at Edinburgh University. Our elders—Clyde Mitchell, John Barnes and Peter Willmott—were especially supportive.

4. The initial Advisory Board consisted of Janet Abu-Lughod, J.A. Barnes, Colin Bell, Stephen Berkowitz, Jeremy Boissevain, Nancy Marshall Chapman, A.P.M. (Tony) Coxon, Bonnie Erickson, Claude Fischer, Linton Freeman, Harriet Friedmann, Gerald Gold, Mark Granovetter, Gudmund Hernes, S. Roxanne Hiltz, Leslie Howard, Peter & Trudy Johnson-Lenz, Charles Kadushin, Fred Katz, T. David Kemper, Edward Laumann, Joel Levine, J. Clyde Mitchell, Robert Mokken, Christopher Pickvance, Bengt Rundblad, Christopher Smith, David Todd, Herman Turk, Lois Verbrugge, Peter Willmott, and Bev Wellman (conjugal consultant). Of these only Erickson, Freeman, Laumann, and the Wellmans were at the April 2000 (Vancouver) International Sunbelt Social Network Conference.

5. These students were most notably: Karen Anderson, Peter Carrington, Liviana Mostacci Calzavara, June Corman, Barry Edginton, Vicente Espinoza, Alan Hall, David Hillock, Robert Hiscott, Edward Lee, Barry (Crump) Leighton, Michelle Martin, Keiko Minai, Pat Parisi, Alexandra Radkewycz, R.J. (Jack) Richardson, Cyndi Rottenberg, Alicia VanDerMeer, Walter Carroll, and Scot Wortley. Although INSNA has largely left Toronto, we currently have an active crew of network analysis graduate students: Susan Bastani, Mark Chapman (Religious Studies), Keith Hampton, Dimitrina Dimitrova, Laura Garton, Emanuel Koku, Nancy Nazer, Emi Ooka, Anabel Quan-Haase (Information Studies), Detelina Radoeva, and Alicia Zuccala (Information Studies). Caroline Haythornthwaite recently graduated to Assistant Professor at the Graduate School of Library and Information Science, University of Illinois, Nancy Nazer is joining Nortel Network's Digital Interpretative group (11/00), and Keith Hampton will be an Assistant Professor of Urban Studies and Technology at MIT (1/01).

6. Source: An undated grant proposal I prepared in the early 1980s.

7. At the 2000 Sunbelt-related Vancouver festschrift for Lin Freeman, Ron Burt referred to the early "Harvard hegemony" in social network analysis. Despite the handicap of a Harvard-less education, I recall that Ron set the record during his early career for the most articles written and abstracted in Connections per issue. It was not a closed system; there was affirmative action for Chicago graduates.

8. Nick's widow, Carolyn Mullins, was closely involved with his work at Harvard and while he was writing theory groups. A professional teacher of technical writing, Carolyn taught many of us how to write clearly – see her A Guide to Writing and Publishing in the Behavioral Sciences (1977). Carolyn Rack continues in the writing game, working with her husband Phil in Columbus Ohio USA, as editor/publisher of a major periodical for the hardware and plumbing trades.

9. I didn't do any conference organizing after 1978. Editing and publishing Connections and building INSNA was more than enough.

10. The evidence is clearly visible in the Freeman festschrift t-shirt produced by Bill Richards for the Vancouver 2000 Sunbelt.

11. EIES (the Electronic Information Exchange System was originally developed by NJ Institute of Technology computer scientist Murray Turoff for the US Office of Civilian Defense, with substantial input from his soon-to-be wife, S. Roxanne Hiltz – a Lazarsfeld/Columbia-trained, small-groups sociologist, an original INSNA board member. Hiltz and Turoff's The Network Nation book (1978, 1993) is named after the "Network City" article that I wrote with an undergraduate (Craven and Wellman 1973).

12. P+T also invented the now widely-used term, "groupware," about that time; see the account in Johnson-Lenz and Johnson-Lenz 1998.

13. You can find information about most social network software packages on INSNA's website: http://www.heinz.cmu.edu/project/INSNA/soft_inf.html

14. Mulherin, Kawabata and Sonquist (1981); Wellman (1992); Müller, Wellman and Marin (1999).

15. Conspiracy theorists should note that it is Lafayette College, not Harvard, that dominated INSNA at the start. Al Wolfe had taught at Lafayette in the early 1960s while I was an undergraduate there. Having not yet come to my career senses (I was following my parents' wishes to become a doctor — "or at least a dentist"), I did not take courses from him then.

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Barry Wellman

Ties & Bonds

BBS *[Barry's Bulletin-Board Service]*

Ron Breiger to Soc, U Arizona, starting summer, 1999.... ***Brian Butler*** appointed to Katz Graduate School of Business, U of Pittsburgh. He's studying computerized listservs as social networks.... ***Louise Tilly*** spent 1998-1999 on sabbatical at Inst for Advanced Study (Princeton), retired from New School (6/99), and moved to Evanston IL where she will be affiliated with History Dept.... ***Detelina Radoeva*** currently a consultant with the UN's Food and Agriculture Organization, based in Rome. Among other things she's working on a pilot project in Bulgaria to test measures of formal and informal agricultural work systems in these countries, with special attention to comparing men's and women's work.... ***Howie Becker*** is now living permanently in San Francisco, while teaching winter quarters at Univ Cal - Santa Barbara... ***Shinji Nozawa*** gave a radio lecture about kin and community networks for Japan's University of the Air, 8/99....

Stanford Sociology Goes into Structural Orbit: Newcomers ***Karen Cook*** (U North Carolina - Chapel Hill), Doug ***McAdam*** (U Arizona), ***Woody Powell*** (U Arizona) join Elise Bienenstock, Mark Granovetter.... ***Shin-Kap Han*** moves from Cornell to Soc, U Illinois summer 2000.... ***Ann Mische*** appointed Asst Prof of Soc at Rutgers.... ***Pam Popielarz*** tenured at U Illinois-Chicago.... ***Brian Sherman*** tenured at Soc, Albany State (Georgia).... Belated wedding announcement: ***Jeylan Mortimer*** and ***Jeff Broadbent*** (Soc, U Minn) m arried for 2 years.... ***Keith Hampton*** (Soc, U Toronto) marrying Brenda

Gifkins, 6/00.... ***Keith Hampton*** has also been appointed Asst Prof. Of Planning and Technology at MIT's Dept of Planning, effective 1/01.... ***Nancy Nazer*** (Soc, U Toronto) has been hired by Nortel's Design Interpretative [HCI] unit.... ***Uwe Matzat*** (Groningen) visitor at U Toronto, Oct-Nov/99. ***Amalya Oliver*** (Soc, Hebrew U) awarded tenure.... ***Martina Morris*** (and oceanographer spouse) spending 1999-2000 academic year at Univ. of Western Australia....

....George Barnett (Communic, SUNY-Buffalo) elected chair of the Communication and Technology division, Int'l Communic Ass.... ***Dean Behrens*** (Soc, U Toronto) awarded the Faculty of Arts & Science Outstanding Teaching Award for innovative teaching in his course about HIV and AIDS..... ***Pablo Boczkowski*** appointed Asst Prof at MIT's Sloan Schl of Management, to start Spring 2001.... ***Karen Pettigrew*** now Asst Prof of Info Sci, U of Washington.... Structuralist ***Randy Collins*** (Soc, U of Penn) nominated to run for AmSocAssoc Prexy; ***John Hagan*** (currently at Soc, Northwestern, but he always seems to come back to U Toronto) nominated for ASA Vice-Prexy.... ***Lynn Smith-Lovin*** (U Arizona) and ***Michael Burawoy*** (Berkeley) nominated for ASA Council; ***Roger Gould*** (U Chicago) and ***Douglas McAdam*** (Stanford) nominated for ASA Cttee on Publns.... ***Bernard Farber*** (Soc, Arizona St.) died 5/00. While not officially a network analysts, Bernie's research into kinship and the family informed and improved my work. Although retired, Bernie was co-editor of *Sociological Inquiry....* **Nicholas Babchuk** (U Nebraska), known for his work on voluntary organizations, died 8/99.

Herb Gans (Soc, Columbia) awarded the Am Soc Assoc's Award for the PublicUnderstanding of Sociology. In the 1960s, Gans' *The Urban Villagers* and *The Levittowners* documented the prevalence of local communities.Other network-noteworthy ASA Section award winners are ***Jeff Goodwin*** (NYU) Comparative/Historical Soc best book/article award for "The Libidinal Constitution of High Risk Social Movement: Affectual Ties and Solidarity in the Huk Rebellion"*AmSocRev* 62 (1997); ***Noah Friedkin*** (U Cal-Santa Barbara) Math Soc best publication award for *A Structural Theory of Social Influence* (Cambridge U Press); ***Carter Butts*** (Carnegie Mellon) Math Soc best grad student paper for "A Bayesian Model of Panic in Belief" (*Computational and Mathematical Organization Theory* 4, 1998); ***James Montgomery*** (LSE) Rational Choice (section) outstanding article award for "Toward a Role -Theoretic Conception of Embeddedness" (AJS)

American Sociological Association Elections

Richard Alba (SUNY-Albany) elected VP of AmSocAssoc; ***Bernice Pescosolido*** (Indiana U) elected to ASA's Ctee on Publications; ***Cecilia Ridgeway*** (Stanford) elected to ASA's Ctee on Nominations.

Networking the World of Publishing

City and Community is the second new journalI've had a large hand in starting (counting this one). With the 1st issue coming out early in 2001, it will be the official journal of the Community & Urban Sociology section of the Amer Soc Assoc (Not coincidentally, I'm section chair to August). We're the pioneers of a new ASA policy of section-sponsored journals. Anthony Orum (Soc, U Illinois - Chicago) will be the editor, with myself and a few others as Associate Editors. It's clear that personal community net-works, elite communities, social support, virtual communities will be key elements of our articles. It will be available online as well as in print.

Elsevier Publishing, the publisher of *Social Networks,* has bought ***JAI Press***, the publisher of Wellman & Berkowitz, *Social Structures* (slightly updated edition). As the cognoscenti know, the "J" in JAI stood for "Johnson" (George and Herbert). When I called the new Elsevier-ized JAI early in 2000, the receptionist didn't have a clue when I asked for "Mr Johnson". "No one works here by that name." Eventually I got connected to a power-that-be. When I told her this story, her response: "And they aren't missed!" I've had enough mis-adventures with JAI to know what she means. Even now, you still can't order a book from their website.

Field Methods a new journal edited by Russ Bernard, edited by Carole Bernard and published by Sage. It is an outgrowth of the former *Cultural Anthropology Methods.* As its predecessor, it comprehends a wide range of methods of data collection and analysis. (Some networkers are on the ed. board.)

Journal of Social Structure is a new INSNA-sponsored journal. I assume there is a big announcement about it somewhere in this issue, but I did want to note it here. ***David Krackhardt*** (B-school, Carnegie Mellon) is the editor, INSNA is supplying a start-up subsidy. As this will be an online-only journal, David looks forward to having pretty pictures, computer apps, raw data, inter-active stuff, commentary, etc. at the website. The 1st article, by Linton Freeman, came out 2/00. For details, go to: **http://www.heinz.cmu.edu/project/INSNA/joss/**

Social Problems is publishing a special issue on ***globalization***. Contact ***David Smith***, ed., 3151 Social Science Plaza, U of California, Irvine CA USA 92697-5100 by 31Mar00.

Short Shticks

Netnomics is a new journal, relating macro and micro economics to electronic networking: pricing schemes, e-trades, data mining, fore-casting and filtering, software agents, distributed dbases, etc. Ed: Hans Amman, economics. U Amsterdam. **www.fee.uva.nl** Email: **amman@fee.uva.nl**. The 1st issue contains "Jobs on the wire: in search of the perfect labour market" (Hanno Beck) and the 2nd issue has "Electronic money and the network externalities theory" (Leo van Hove).

Ancestry Trees are really longitudinal networks. (Altho with multiple marriages and parentages, simple tree structures are no longer the predominant game). The Mormon

Church has always had the most data. If you can get through to their busy website, you can check yourself (and others) at **www.familysearch.org**. Other sites are **www.ancestry.com** and **www.cyndislist.com**.

Ronnie the Free Spirit: The recent publications of former US President Ronald Reagan's letters to an admirer portray him more as a libertarian than as an elite *dirigisimist.* During Jimmy Carter's late 1970s administration, Ronnie wrote to Lorraine Makler Wagner:

> Your concern about trilateral commission is shared by many, including me. I've enclosed a packet that gives some background as well as a few eyebrow-lifting remarks by a commission member. Naturally it isn't a research piece which digs down deep, but it's obvious the tri-laterialists believe there is an elite which should guide the affairs of men. [Douglas Brinkley, "The President's Pen Pal," *New Yorker* 26 July 99: 38].

The Costs of Weak Ties

We all know that weak ties extend our reach - globally as well as socially. It's a simple extension of the Granovetter-Feld-Wellman weak ties/foci/community liberated argument. Having far-flung ties is great for finding local guides when we travel abroad. (Many of whom subsequently show up as visiting scholars in Toronto.) There are costs too: As I listen to the recent spate of natural and human-made disasters, I immediately think of the people I know there: suffering from quakes in Taiwan, Turkey and California; floods in North Carolina; atavists in Kosovo; volcanoes in Ecuador; the usual *mishegoss* in Israel. It's clear to me that my global networks increases the number of calamities with which I have a personal sense of connection. But does this mean that us globalizers suffer more? I don't think so. Having such a variety of connections means that any one thing does not dominate my life as it would if I were only invested in my neighbourhood or local work group. When my department chair is upsetting me, I have a number of other milieus in which I can get involved.

A ***"Posse"*** is a team of older teens in NYC who know each other and can provide mutual support. The Posse Foundation is a scholarship program that brings together such small groups of impoverished high school students for mutual support, and sends them off to college together. [Bob Herbert, "The 'A' Teams." *NY Times,* 7 May 98: A31]

Networked Quality Control: "When we talk about the people who can afford [an Egyptian- assembled BMW car], virtually everybody knows everybody else. If we made even a few minor mistakes, everyone would know about it and we'd be left sitting on our cars." [BMW Egyptian Sales Manager Elwi Captan, quoted by Michael Rauch in "Boom Time on the Nile," *BMW Magazine,* Winter 97:85.

Export Production, Retain Inventiveness: Altho multinationals have factories around the world, they keep research, design and development at home. John Cantwell, a Rutgers economist, found that in the 1970s only 7% of US multinationals' patents came from work done abroad; only 9% in the 1980s. European companies are better: From the 1950s onwards, 30% of their patents have come from technological activity abroad.

[Christopher Lorenz, "`Global Web' Still Not Free of Tangles," (UK) *Financial Times* 15July94].

The Connectivity of War: Curtis Signorino's Harvard political science doctoral thesis re-analyzes a batch of statistical models that test theories about when states will go to war. These models had the limitation of focussing only on the individual traits of each nation, such as its military capacity and form of governance. Signorino found a way to put connectivity back in, analyzing how states size each other up. [Robin Wilson, *Chronicle of Higher Education,* 9/97]

The Connectivity of Justice: Desmond Tutu spoke at the Univ of Toronto on Feb 15. He spoke of his Truth and Reconciliation Commission's approach of "restorative justice": "We South Africans believe in Ubuntu -- the essence of being human, that we are caught up in a delicate network of interdependence. We say 'A person is a person through other persons.'"

Paul Revere Was a Schmoozer and a Yenta: "What distinguishes Fischer's book is not any insistence on Paul Revere's individual agency on April 18-19, 1775 [when he warned suburban Bostonians that 'the British are coming!'], but its emphasis on the collective action of the people of Massachusetts. Revere gets full credit for deep involvement in the revolutionary movement. He is shown to have belonged to more of the many radical groups and associations in Boston than anyone else except Joseph Warren. His familiarity with other colonial leaders thru these associations made him an ideal carrier of messages among them.... 'Even before he set out for Concord,' Fischer shows us, 'many people in Boston helped him on his way -- so many that Paul Revere's ride was truly a collective effort....' And it deserves to be seen as Fischer has shown it, as a symbol not of American individualism, but of a new nation organizing for independence." [Edmund Morgan, "Hostage to Fortune," a review of David Hackett Fischer, *Paul Revere's Ride,* in *NY Review of Books,* 23June94:36-38.]

Tales of 19th Century British Prime Ministers: "Once at a social gathering, Gladstone said to Disraeli: 'I predict, Sir, that you will die either by hanging or of some vile disease.' Disraeli replied, 'That all depends, sir, upon whether I embrace your principles or your mistress.'" [contributed by ***Karl Van Meter***]

The Standard Deviation of Sex: An overzealous editor has inserted an amusing typo into "How to Use SPSS to Study Ego-Centered Networks," by Christoph Müller, Barry Wellman and Alexandra Marin, *Bulletin de Methode Sociologique* 64 (10/99). We wrote:

> AGGREGATE can also output other summary statistics. For example, you can calculate the standard deviation "SD (variable list)" to measure the ***SES*** and age heterogeneity of ego-centered networks.

In the published text, ***SEX*** was substituted for ***SES,*** as the standard English shorthand for "socio-economic status" is not as internationally under-stood as we had thought. I am still trying to figure out what the standard deviation of "sex" is.

Network Visions: "Mrs. Gaskell was 1 of the literary progeny of that choleric genius Thomas Carlyle.... Carlyle took it as his mission to show that there was nothing in the world, animate or inanimate, that was not connected with the rest of it by invisible strands of common inheritance that he called organic filaments, although he might as well have called them God." [Robert Bernard Martin, "The Discreet Charms of Mrs. G.," *New York Review of Books].*

Parisian Risk-Taking: "In the mid-1970s, I spent a year in Paris. Each morning, I took my youngest child, then just 2 years old, to a bilingual nursery school. Each morning, we waited for bus 69, which stopped at the corner of Rue Saint Jacques and Rue des Écoles. Each morning, bright and early, Michel Foucault walked past us on the way to the Collège de France. I never spoke to him, but I could have. Needless to say, others did. Such is life for the intellectual nobility in France. One is constantly at risk of a personal encounter with one's admirers or enemies." [Charles Lemert, *American Journal of Sociology,* 3/98:1108]

Nervous Network State: "The network of local governments and the civil service is the nervous system of the state." Czech President Václav Havel speaking 9 Dec 97, as quoted in his "The State of the Republic," *NY Review of Books,* 5Mar98:43.

The Network Society: "Japan is... a 'network society.' The Japanese rely heavily on networks for the distribution of information, an outgrowth of the traditional Japanese *ie*-system, that is the familistic organization of all sorts of social bodies, such as companies, political parties, bureaucratic circles, academic clubs, crime syndicates. The distinctive feature in Japan is that 'network-type social systems are granted social legitimacy.'[Florian Coulmas, "Study Dissects the 'Impenetrable' Japanese Society." Review of *Nihonkei Shistuemu (Japanese Systems: An Alternative System*) by the Research Project Team for Japanese Systems, *Japan Times,* 20June92.]

Pass Laws, Practice Networks: "Italy is, after all, a society in which obeying the law is often virtually impossible and in which rights have been largely replaced by privileges, dispensed by the parties.... One of the blind spots of the left was its failure to appreciate the legitimate anxiety produced by a system in which the uncontrolled proliferation of laws and regulations is only matched by the arbitrary way in which they are applied." [Adrian Lyttelton, "Italy: The Triumph of TV," *NY Review of Books,* 11Aug94: 25.

Making the Mafia Manifest: "A few years ago it was fashionable to deny the reality of the Mafia as an organization. In Italy, it was said, Mafia was just a set of common values and attitudes which made it possible for Sicilian criminals to communicate and cooperate with one another. The mafiosi worked thru informal relationships of kinship, friendship, and clientage. This view was a plausible reaction to theories of a vast, all-embracing criminal conspiracy.... This minimalist thesis can no longer be supported .... [Although] the word `mafia' ... was a literary creation, ...Cosa Nostra' is a highly structured organization with precise rules, procedures for admission, and a hierarchy of authority.... Cosa Nostra in the US and in Sicily are 2 distinct organizations, linked only by personal contacts.... It has apparently been a rule both in the American and the Sicilian mafia that drug trafficking is the responsibility of the individual mafioso, who operates independently from his family. The rule is necessary not only for reasons of security but because the immensely complicated international networks involved in the drug trade cannot be effectively controlled by an organization based in 1 country." [Adrian Lyttelton, "The Crusade Against Cosa Nostra," Review of Alexander Stille, *Excellent Cadavers: The Mafia and the Death of the First Italian Republic,* in *NY Review of Books,* 5Oct95:51-52,

How To Manage Other People's Money: While being a resident scholar at Bellagio, Italy, I dined one night with the investment manager of a US$300 Billion pension fund. The key to success: "Dress British, Think Yiddish!"

Small State, Small World: "In Rhode Island there are no degrees of separation. 'Most places you meet people and find out you have friends in common. In Rhode Island, it's scary. You find out you're actually related to them.... It's the densest state in the country." [Screenwriter Bobby Farrelly of *Outside Providence* and *Dumb and Dumber* as quoted by Dana Kennedy, *New York Times,* 29Aug99:AR9].

Granovetter Outed: Malcolm Gladwell recent long article in *The New Yorker* explicitly uses ***Mark Granovetter's*** "strength of weak ties" argument to show how networking can bring disparate social circles together. ["Six Degrees of Lois Weisberg," 11 Jan 99]

STDs Diffuse Among the Trusting: 3.5M American women mistakenly think their sex partners are faithful, according to the Alan Guttmacher Inst. The data contain a statistical impossibility: "The % of men reporting multiple partners over the past year was substantially higher than the % of women reporting that their partners had other partners during the past year." *BW:* Meanwhile Kenyan friends report that elite women are choosing voluntary celibacy to avoid the AIDS epidemic. [http://news.excite.com/news/r/991009/news-health-stds].

Pundit on Tap: Two years ago I reported an *Annie Hall* (Woody Allen-Marshall McLuhan) moment in Geneva when ***Steve Borgatti*** leaped into the lecture room just as I wished out loud that the auteur of *UCINet* be on call. That was a pre-arranged piece of scholarly theatrics. But 8/99 I had a real Hallish experience. I was visiting the Univ of Illinois, collaborating with my former student ***Caroline Haythornthwaite***, now asst prof of Info Science there. As we were walking downstairs, a graduate student asked Caroline, "What was the biggest block to finishing your thesis?" I immediately chimed in: "I was!"

No Sight for Sore Eyes: While Caroline Haythornthwaite and I were collaborating, we had occasion to use *both UCINet4* and *UCINet5.* We soon discovered that the older DOS-based version 4 had one major advantage over Win95-based version. Its fonts are bigger and more legible at a distance; a boon to mature collaborators.

Why We Need Big Iron: "If people don't think mathematics is simple, it is only because they don't realize how complicated life is." [Reported by computer scientist Franz Alt, "Franz Alt Remembers the Early Years of Computing and the Creation of the ACM," *ACM Member Net* #39 (2/96):5]

Relational Foraging: "John Laidman is a Forager whose sole responsibility is to search and build relationships with local farmers to provide the freshest products for exclusive use at Hildebrand's Vineyard Café. John arrives at the restaurant back door each day with a harvest of a variety of the season's finest and freshest produce." [from "The Forager's Story, Hildebrand's Vineyard Café, Niagra-on-the-Lake, Ontario, Canada, 24Aug99]. This is an expensive, lovely place in a great location. It even has drinkable Ontario wines.

Cisco Networks: "Students at the U of San Francisco can take a Cisco Systems course in networking. 'Our goal isn't to buy our way into schools' says their director of global education markets 'but to help create a generation of the work force with networking skills.'" [*Investor's Business Daily* 12May98]. Cisco is the dominant maker of internet switches, etc.

Byron the Clusterer: "Oh, for more people with fewer relationships among them!" 'Lord Byron' in Paul West, *Lord Byron's Doctor* [an historical novel], Chicago: University of Chicago Press, 1991: 115.

Degree or Betweenness? The US Senate is considering legislation that would apply sanctions against "drug kingpins": UnAmerican corporations identified as central to illegal narcotics trafficking. [*International Herald Tribune,* 5Nov99: 3]. Hmm, wouldn't that be the Internet and crypto software, not to mention *Windows*?

Just Passing Through: In a letter to the editor deciding that Chinese dissident religion, *Falun Gong,* is an organized group, practitioner Simon Veazey (of London) says "Falun Gong has no membership, only practitioners. There is no organization, certainly not one involving thousands of cells.... Practitioners [do not] follow some sort of regimented set of rules or orders.... I understand that it is difficult to see how so many practitioners manage to communicate without some formal organization. A network of communication forms organically through the fact that practitioners know so many other practitioners. The numbers are so great and the commitment to their beliefs so strong that word spreads very quickly and practitioners act very quickly. This gives the false impression of a highly organized 'movement'. In fact, practitioners end up doing the same thing because they as individuals want to. The sheer scale of numbers then gives the false impression of an organized movement." [*International Herald Tribune,* 4Nov99:9]

Toronto in Japan: Keiko Minai has just published a Japanese language paper, "Network Analysis at the University of Toronto." it is in the *Institute of International Sociology Journal* 16 (3), 1999: 1-24. The journal is published at Kurashiki, Japan.

Networkers Get What They Deserve:

Norms and Utilities: The 1998 OCIS Best Published Paper Award went to ***Bob Kraut, Ron Rice & C. Cool*** for "Varieties of social influence: The role of utility and norms in the success of a new communication medium," *Organization Science* 9(4), 437-453. The chair of the prize committee (another network analyst) noted 5 qualities: "1. It builds by comparing (and ultimately reconciling) two very compelling and competing perspectives in the study of social influence: the role of utility and norms. It clarifies the nuanced differences in these two "varieties of social influence" in such a lucid fashion that it is almost embarrassing for those of us who have struggled with this debate over the years. 2. It offers a research design that maximizes the benefits of a field study with an appreciable degree of 'control.' 3. The collection, analysis and interpretation of the over-time use of the two technologies sets some very high -- and desirable -- standards for others working in this research community. 4. The qualitative insights on externalities and development of norms serve as a good example of work in its genre while at the same time providing some provocative research questions and hypotheses for subsequent quantitative analysis. Finally, I was struck by the authors' ability to talk about complex conceptual and methodological issues with a level of clarity and interest that I suspect would appeal both to a researcher immersed in this specific line of inquiry."

Networking Philosophers: *Randall Collins* (U Pennsylvania) received the American Sociological Assoc's "Distinguished Scholarly Publication Award" for the *The Sociology of Philosophies: A Global Theory of Intellectual Change* (Harvard University Press, 1998). Ranging ancient China, India, Greece, medieval Islam, Israel, Christendom, Japan and modern Europe, Randy uses network models (and other stuff) to examine the social structure of philosophical communities, the interrelations of communities across time and space, and the nature of scholarly creative energies.

Computerizing Connectivity

Karen Ramsay points out Doug Wilson's new wrinkle on computerized matching at http://www.globalideasbank.org/SD/SD-28.HTML. "How to find the perfect match, one in a million or better" is a mixture of J.L. Moreno's original sociometric ideas, online dating services, and Java scripts. Wilson asserts:

> "You can have that one-in-a-million job, friend, spouse or sexual partner if you help promote the idea that advanced social technology can guarantee us all such wonderful social connections. Not only can we live better with better connections, but we can do it in a society free of crime, because well-connected people rarely commit crimes, and we will have more income to spend on what we want, because well-connected people are more productive and earn more.... Someday your great-grandchildren will live in a society with near-perfect social connections, but that will be too late for you. But if you help promote this idea it may all happen much sooner, within a few years, and you can be one of the first to enjoy the results. 'Human society as a virtual network of connections that can be improved dramatically using combinatorial optimization'..."

> "Rather than designing a society from the top down, as philosophers and social theorists have done since the days of Plato, I am more concerned with the quality of individual social connections. For me a society that works must be one in which the individual social connections between us are strong ones. All social connections, including all of those between husband and wife, between teacher and pupil, and between employer or supervisor and employee must be based on genuine compatibility, or the whole of society is negatively affected.
>
> "Isn't it very difficult to find compatible people? Yes, it is. But it shouldn't be. Good social connections are vital to a good society - what is a society, after all, but people and the connections between them? So, people wanting their society to work well should insist on social technology that can guarantee people good, truly compatible, social connections."

Wilson proposes a Java and CGI driven "web-based matching system" in which people can play with different personae and get immediate feedback. The web questionnaire would include psychological and skills tests. It would lead to "Matching for working together on some task; for the buddy system; for simple friendship; for more intimate connections; and for real world jobs." Initial encounters between identified matches would be anonymous and on-line.

Potentiating Capital

While Bev Wellman and I were resident scholars at the Bellagio Centre in Italy (Fall 1999), a group of large-scale pension managers held a conference. (Note to American professors: I really liked the guy from TIAA - and I hear that he's done well by you.) One gave a paper (sorry, don't know the authors as I snuck in) about investment in third world countries. The key point was that investment flows into and out from regions (such as Southeast Asia), rather than countries. Inflows and outflows are quite correlated between countries in a region, no matter what their economies are doing. (The State Street Bank in Boston collects these data daily.)

Why is this? For one possible explanation, my mind naturally ran to the multi-level analysis paper that Ken Frank and were finishing at the same time. (You can read about it in the *Social Capital* book, that Nan Lin, Ron Burt and Karen Cook are editing, or go to my website at **www.chass.utoronto.ca/~wellman** for a preliminary version.) We find that networks "potentiate" similar ties. For example, if there are two parent-child ties in a network, each is likely to be more supportive than if there were only one such tie in the network. Similarly, investment into one country seems to stimulate investment into other countries in that region.

This is just my hunch, because as an interloper I dared not ask questions. Other plausible explanations may lead to your mind. So might other uses of these data, perhaps input-output, blockmodelling, or network clustering. If the data were available on a corporate level (I don't know), it might fit nicely with the world-system corporate interlock data that Joel Levine pioneered clustering a while ago.

Oh, I did ask these mega-pension managers (one guy told me he manages US$300 Billion) one question: "Should I buy or sell?" "I dunno," he answered truthfully or evasively. But then he asked me a question, because I was reading the *International Herald Tribune* at the time: "How did the market do?" "Which stocks are you interested in?" I asked in return. "All of them," he answered. "We're so big that we've gone past worrying about individual stocks."

Community Liberated

Peripatetic Prophets: "How come everyone is always on a trip in the Bible?

- There's Adam and Eve screwing up life in Eden and off they go.
- There's Noah and his family packing the ark.
- There's Joseph transported to Egypt.
- There's Moses on the return trip.
- There's Ruth and Naomi wiping the dust of Moab on their sandals and heading for Judah.
- There's Daniel diverted into a lion's den and Joshua stomping around the walls of Jericho.
- There are Mary and Joseph going here, there, and everywhere.
- There's John the Baptist popping up all over the place.
- There's Jesus traipsing back and forth to Galilee, off on a mountain side, out on the water, in a desert, riding into Jerusalem, walking his cross.
- There's Paul criss-crossing the Roman Empire."

[John Fraser, "Don't Have a Cow, Lord." *Saturday Night,* 12/93:12-13.

***Networking Politicians in the Mountains of Borneo**:* To keep their autonomy when the Indonesian government wants to impose their own order [see East Timor for another example], the Meratus ethnic group have developed "a politics of their own, free of the external order's threat and interference -- a politics of intensely competitive individual leaders, moving ceaselessly about the local area, intruding here, advising there, connecting, mediating, petitioning, cajoling, bluffing, but never assembling anything very much in the way of official authority or enduring power." [Clifford Geertz, "Life on the Edge," *NY Review of Books,* 7Apr94:3-4]

[For the Meratus,] particularly in the [isolated, forbidding] central mountains, going from 1 household to another involves travelling: There are no clear boundaries between local and foreign spaces. Neighbourhood-based communities are shifting and flexible. Those who would be neighbourhood leaders continually renegotiate their constituencies as they visit past and present constituents. Effective travelling and visiting become central practices of leadership and community-building. The politics of travel-ing bring regional authority and male privilege into the heart of local concerns." *[Anna Lowenhaupt Tsing, In the Realm of the Diamond Queen: Marginality in an Out-of-the-Way Place*]

Going for the Networkers Vote

Al sez: "I Have a Friend in Minsk": "The other day, I was talking to Otkir Sultonov - you know, the prime minister of Uzbekistan. And he asked me, 'Did you send a birthday card to Hamed?' That, of course, is Hamed Karoui, the prime minister of Tunisia. And I thought, God! How could I have forgotten? I had just been talking about him with Ion Surza, the prime minister of Moldova. We're old friends. We actually met thru a mutual friend, Lennart Meri, the president of Estonia, of course." [US Vice-President {and presidential candidate} Albert Gore, as quoted in the *International Herald Tribune,* 11Nov99:3. *BW:* Gore denied he was implicitly twitting opponent George W Bush's not knowing the names of foreign leaders. I believe Gore was actually announcing his availability for a part in the proposed Kevin Bacon *Six Degrees of Separation* movie.]

Taking Care: "What do you do if your mother lives in Phoenix, you live in Washington, and she's fallen and broken her hip? We must work together to find ways not only to care for those with long-term needs, but also to support the caregivers." [Tipper Gore {Al's wife}, testifying 8Nov99 to the US Senate Committee on Aging, as reported in the *International Herald Tribune,* 12Nov99:10. *BW:* The answer is obvious, Tipper. Ask Al to call Otkir who will call Hamed, who's so thankful that he received a birthday card that I hope is better personalized than the auto-reply I got when I emailed Al to congratulate him on inventing the Internet.]

Networkers Get What They Deserve:

Networkers Network to Study Networks: 2 teams led by U Illinois networkers have won sizeable (US$1M+) National Science Foundation grants to study our evolving networked, wired world. ***Nosh Contractor*** (Communication) and ***Stan Wasserman*** (Psych/Stats/Soc) are studying organizational complexity. ***Kathleen Carley*** is a co-investigator. ***Alaina Michelson*** (Supercomputer Inst.) is the Principal Investigator & ***Caroline Haythornthwaite*** (Info Sci) a lead Co-Investigator in a study of the creation and distribution of knowledge in scientific research teams.

Going Postal Disrupts Networks

Remember the Bay Harbor Inn in Tampa? There were at least 3 Sunbelts held there in the 1970s-1980s, thanks to Al Wolfe and Susan Greenbaum's efforts. So it was *deja vue* when I read on 30Dec99 that a male housekeeper, Silvio Izquierdo-Leyva, shot and killed 4 fellow employees in the lobby where many of us had networked intensively in the past. "He didn't say nothing -- just 'boom, boom, boom' said Radisson employee Lawrence Wilson. "We had no beef with the guy. He just snapped." The lobby was filled with

American football fans in for the New Year's Day Outback Bowl between Purdue and Georgia.

The Bay Harbor Inn was an interesting hotel when we conferenced there because it was owned (as it still is) by George Steinbrenner (a real person, not just a *Seinfeld* character), the very hands-on owner of the NY Yankee baseball team. I saw him breakfasting there once but didn't dare speak to this mercurial man. We're structurally equivalent in at least one respect. Once when I bought a newspaper there and left my penny change behind, the shopkeeper said, "Oh, just like Mr. Steinbrenner." [Source: AP/Excite Top News Online, 31Dec99]

Wired Networks

Clique.com "is the only company that connects publishers, advertisers and readers with a comprehensive e-commerce solution. We develop and operate customized online marketplaces ...." *BW:* If you want to read more about a company that apparently knows more about hype and IPOs than what a "clique" is, go to **http://Clique.com**.

Truth Revealed about Small Worlds - and Me! "But back to unspoofable identities and the nature of interconnectedness of human (and/or munchkin) relationships. Barry Wellman is a PhD in sociology and in charge of the international network for social networking analysis. ***A very warm, astute man who I've never met.*** [bold italics mine, of course.] He defines acquaintance as "someone you would recognize, were you to meet in a chance encounter." At this point that's gotta border on 4500 people... not to mention Internet acquaintances who I've never met but would be willing to strike it up were we to meet by chance. Even the guy below, even if he wasn't a second cousin, sure I'd talk with him were we ever to meet.... Dr. Wellman believes after extensive research that the average person has 1500 acquaintances, with wealthier and older types tending to exceed that level. ...."Any two people on the planet can be linked by five or fewer intermediaries. Since I'm neither Rich nor Classic, how am I to account for the fact that I know 4500 people AND that I can spoof knowing a heckuva lot more people than that?... (I reached the number 4500 by taking the number of people in my email aliases file -- 1500 -- and conservatively multiplying it by three. Note also that "acquaintance" is a one-way relation; someone can be acquainted with me and I have no idea who they are...)."

[BW: These words were written by someone I don't think I'm acquainted with: "I Find Karma", (**adam@cs.caltech.edu**), 23April98 Perhaps he took my Sunbelt Newbies course. Besides being an astute judge of character, I believe that I Find Karma may be right, and the Internet is facilitating a large increase in the number of ties, as well as enabling many of us to be more actively involved with our weaker ties. However, I've never said "extensive" to anyone.] **http://xent.ics.uci.edu/FoRK-archive/apr98/0350.html.**

***Cyberküsse*:** I used the *Alta Vista* search engine to find a German ad for computer networks that cited me as a legitimating authority. Then I used *Alta Vista's* automatic translation feature to see what they were saying about me. Here's part of what I got:

> "According to a study of the sociologist Barry Wellman waving man of the University of Toronto there is no reason to condemn Internet as relations killers. Social contacts are not only attached on-line, also intimate relations function in the virtual space. Directly and directly associates also in the Internet gladly. Since economic status, origin, sex, and age in the Cyberspace do not play roles, user to Internet Flirts are encouraged, which would not have dared it 'in the real life.' One meets and one chats however not at public workstations, but exclusive in the network, which leads to new interhuman interaction forms. In this virtual relationships the relations problems are dis-cussed fully, tender Cyberküsse [cyberkisses] is sent away, and the new rendezvous, almost as in actual partnerships is agreed upon. User estimate at Internet relations apart from anonymity above all the circumstance, better present themselves and to indicate to be able. In contrast to the telephone the partner in the Internet has more temporal clearance available for its answer."*[BW:* Even if the machine translation had been better, they got my analysis wrong.]

SocialNet "is a new online venture dedicated to addressing the basic human desire to establish relationships, share interests and make connections.... [It] helps people make online connections and form offline relationships -- personally, professional, and socially -- in their local communities.... [The company] has launched 3 ... services: 'relationships.com', 'JustPlay!', and 'WorkingNetwork'. These social networking services are customized to help people find and make romantic connections, identify and arrange one-on-one or group social activities and build new and enhanced professional contacts.... [These] services are customized and delivered to local geographical markets through co-branding relationships with major broadcasters...." *BW:* Alas, this information comes from a web address I wish INSNA had: **www.socialnetwork.org**

Getting STDs Online: Health authorities tracing the networks of a syphilis epidemic found that all 7 infected men had found their recent sexual contacts thru an AOL chat room: "San Francisco Men For Men." To trace the contacts and warn others when AOL refused to reveal the names of chat room habitues, the gay online group "PlanetOut" spent 2 weeks visiting the chat room and warning users about the outbreak. [Reuters Online, 23Aug99, **http://www.wired.com/news/topstories/0,1287,21397,00.html]**

Travelling Bills: *Where's George* is a website where people can enter the serial numbers of US$ bills and trace where they have been or where they are going. Users of the site enter the denomination and serial numbers of individual bills along with the zip code where the bill was obtained. If the serial number matches up with a previous entry, information on the bill's travels is displayed to both the former and new holder of the bill. 3% of the bills have actually been traced online. The trick is marking bills you spend with the "Where's George" URL to encourage recipients to enter their serial numbers. There have been 23K participants, with "Adam K" holding the record for entering 43K serial numbers.[I don't have the URL handy, but you can find it and more at Joe Ashbrook

Nickell, "Follow the Money: It's Online," *Wired News,* 24 Aug99: http://www.wired.com/news/culture/0,1284,21395,00.html]

WatCall, produced by Harlequin Ltd, won the 1998 Privacy Int'l "Big Brother Name and Shame" award. WatCall does traffic analysis for telephone records, avoiding legal requirements needed for phone tapping. [*BW:* A usually reliable source believes that at least 1 INSNA member is involved in such activity.]

Bill Gates the Network Analyst: When Bill was 12, he and Paul Allen discovered computers and started a business analyzing the traffic patterns of various communities. "They used their prep school's computer and won a contract from a major corporation to analyze the electrical power needs of the [US] Northwest and Canada.." [Ken Auletta, "Hard Core," *New Yorker,* 16Aug99:58]

Tracking Geekus Unixus: Bonnie Erickson, Keith Hampton and I have been working with the *National Geographic* folks [they publish the yellow-covered magazine which in pre-*Playboy* times first taught us what the human body really looked like]. The NG did a web-survey in Fall 1998, with approximately 80K respondents. My undergraduate student, Tom Chmielewski, and I did a small piece for *SIGGROUP Bulletin* comparing the 308 North American adult Unix users with the 41,468 adult users of Windows or Macintosh operating systems. (Sorry to disappoint the Mac folks, but they look a lot like Windows folks.). We found that there really is a distinct species, *Geekus Unixus,* that belongs to the genus, *Nerdus.* All but 4 Unix users are managerial, professionals or technical folks. They're male, single and under 40. They like jazz and contemporary rock, and abhor country and "easy listening" music. *Geekus Unixus* spends huge amounts of time online, and spends much time emailing with friends far and near. (Not one uses Internet Explorer to browse the web.) They spend little time offline, don't have much civic involvement, and have less of a sense of a community than WinMacs - both in the "real world" and online. Nevertheless, *Geekus Unixus,* like the WinMacs, is not anomic - their mean score on the Srole scale is positive.

Group Theory is the basis for Alan Huang's attempt to increase internet traffic handling thru a multidimensional array of routers hooked together in a Galois network. [Details in John Markoff, "One Man's Dream to Spin a Faster Web," *NY Times*, 8Feb99:C4]

***Bicoastal Meatspace in the Wired World*:** [Jason McCabe Calacanis is the editor/publisher of the *Silicon Alley Reporter,* covering NYC's burgeoning new-media scene.] "He has found networking [in L.A.] to be a very different business from networking in New York. In NY, he explains, to introduce 1 contact to another is to risk diminishing your credit with both, so you don't usually gather people together unless you have in mind a particular purpose with a fair chance of success. [*BW:* Has Ron Burt been preaching *Structural Holes* to this guy?] In L.A., on the other hand, a person's social worth is measured by the sheer quantity of connections he generates.... 'There's a frantic pollination going on out there. Someone will say, "Oh, I was just on the phone with Francis Ford Coppola talking about you, and he's really into what you're doing and wants to meet with you." Everybody's rushing to network, and there's no thought of why we're networking. It's just, like, Hey, let's hang out.'" [from Larissa MacFarquhar, "The Connector," *New Yorker,* 18Oct99:110-32.]

Following the Money: L.A. internet startup companies have had to work harder than Silicon Valley startups in getting venture capital backing. "The best way for a startup to get noticed is thru a referral,"says Bill Elkus, managing director of Pasadena's Idealab! Capital Partners. "There's a little group of attorneys, bankers and accountants [in L.A.] who cross-refer quality companies," says attorney Allan Sussman. If a plan is referred by Massoud, I'll take a look at it more carefully." [Laura Roe, "Who's Getting VC Money in L.A. -- and How to Get It," *Silicon Alley Daily,* 28July99. Contributed by Howard Aldrich, Soc, U North Carolina - Chapel Hill]

Profitable Networking

Applied Nepotism: A Statistics Canada 1995 survey of 18K Canadians aged 22-24 found that 35% had used their personal networks to find a job. By contrast, 18% had approached an employer directly, 18% had mailed out resumes, and 10% had used an employment service. [Jane Gadd, "Connections Still Key to Landing Job, Survey Finds." *Toronto Globe and Mail,* 26May9 8: B1.] *BW:* Presumably the other 19% had used prayer, bribery, etc.

Campaigning: "Networking is not about who you know -- it's a matter of what you know about who you know. [*BW:* At this point, ***Nosh Contractor*** exclaims, 'I KNOW'.] It's even more that important people with whom you network know and understand exactly what you do. When planning a networking campaign, the approach is the same as with any other project:

> 1. *There are differences in the way people network.* This is particularly apparent between the genders. Members of the old boys' networks know only too well the strength and value of building links to each other. However, women have the advantage of being natural networkers. The network style that women generally prefer is a sociable one. They like to get to know each other first to develop rapport, and only then do they shop business. Men, on the other hand, look for business opportunities first.
>
> 2. *Planning the networking campaign starts with objective introspection.* Networking is constant, active and as exciting as you make it.
>
> 3.*Research different associations and ways to network.* Approach groups of 3 or more people, but don't interrupt. Work on an opening remark. Networking is self-promotion. Use 'if' and 'then' words to encourage interaction.
>
> 4. *Effective listening skills are crucial to networking.* Listen with eye contact. Remember that everyone you meet is a potential customer or

knows someone who is." [Excerpted from Chips Klein, "How to Launch Your Networking Campaign," *Toronto Globe and Mail,* 23Oct98:B11]

The Networked Chinese Economy: "The new flexibility given [in China] to managers of state enterprises has led them not toward market efficiency but instead toward sacrificing efficiency for their own selfish interests and those of the higher officials who protect them. The golden rule of the corrupt manager, in He Qinglian's analysis, is to have a relationship of utter loyalty and trust with one's superior. In addition to outright bribes and kickbacks, one can please this person by employing his friends or relatives, by offering him the use of cars, by providing goods that he can 'try out,' and in many other ways. Once a manager can depend on a superior's loyalty, all else is possible. Since no one within a state enterprise can then effectively challenge a manager's decision about allocation of resources, the manager can act with impunity. The manager becomes in He's artful phrase, the 'semi-owner' of an enterprise in the specific sense that he or she has all the powers of an owner while remaining free of all the responsibilities.... If it is true that accumulating capital is necessary to get private enterprise going, it is also plain that the structure of privilege in China brought about cronyism more than efficiency." He recounts a popular 'Short History of Comradely Sentiment':

In the 50s we helped people

In the 60s we criticized people

In the 70s we deceived people

In the 80s everybody hired everybody else

In the 90s we 'slaughter' [rip-off] whoever we see.

He also notes that academic economists in China are either "toady writers" -- providing academic backing for the favorite ideas of politicians -- or practice "techniques of dragon slaying" -- showing off technically brilliant skills that have little practical use. [Lin Binyan and Perry Link, "A Great Leap Backward?" Review of *China's Pitfall* (in Chinese) by He Qinglian in *NY Review of Books,* 8Oct98:19-23.]

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The Constellations of Economic Power: The Position of Political Actors, Banks and Large Corporations in the Network of Directorate Interlocks in Hungary, 1997

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The aim of this paper is to gain an empirical insight into the structures of economic power in Hungary at the end of the nineties. The paper proceeds by the guidance of the weberian definition of power; as power is existing in relations, the paper is intended to be a relational study of the most important actors in the Hungarian economy, using directorate interlocks to trace these relations. The concepts of centrality and autonomy are used to model the possible constellations of relations that might refer to power. Besides tracing these two constellations, the paper also aims at mapping the qualities that are linked by the analysed relations. The propositions of the privatisation debate, the bank power discourse and the market transition debate are also reinterpreted in a relational context.

INTRODUCTION - A STORY AND A DEFINITION(2)

The aim of this paper is to discover the main dimensions of the interorganisational relations in contemporary Hungary, and to assess a number of hypotheses concerning economic power with the aid of these relations.

A paper based on empirical data is necessarily a compromise between the amount of details lost and the generalisability gained. In this paper many details will be lost concerning the interrelatedness of the actors in the economy. Such details are the courses of action in time. So before turning to data, let us see some of the key actors in a short story.

> *In 1992 a large, stagnating company in textile industry was reorganised by the State Privatisation Agency to become a joint stock company, what was a usual thing in those times. The Agency invited a tender to sell the Company. The first tenders were unsuccessful, the SPA spotted one of the partners of the Company to become an owner. The Partner planned to buy the shares mostly of credit. Everything went in order, except that the Partner company haven' t received the credit, thus it was unable to pay the sum until the proposed deadline. This was the time for the Bank to come to stage: the Company to be sold became indebted so much by this time, that the Bank should have started the filing process. The Bank instead of doing so, supported the group of top managers at the Company to buy it, while it delegated two members to the board. The Bank realised, that filing has a lesser net present value in this case, so it decided to become an owner. For this operation the Bank has utilised its connections at another bank to prevent the Partner to receive the credit, and made it explicit to the SPA, that in case of any privatisation other than the one planned by the Bank, filing would be immediate. A year later the Bank sold its ownership stake, possibly minimising the loss on the credit.*

The story is a minute interplay of the state, the top managers of a large company and a bank. In the following I try to map some aspects of such an interplay analysing the directorate interlocks of political actors, banks and large companies. There have been several attempts to reveal the power relations in the economy by analysing board interlock relations. I will follow the definition of Weber for power:

> *Power is "the probability that one actor within a social relationship will be in a position to carry out his own will despite resistance, regardless of the basis on which this probability rests".*Weber goes on to state, that this probability can rest on any *constellations* or *qualities*.

In this paper I will map the constellations around the most important actors of the Hungarian economy, and to trace the qualities that are connected in such constellations. A constellation is typical to an actor, but it is not a feature of it, neither of the whole network. I define constellations as the *ego - networks* of a given actor. There are two typical constellations that are associated with power in interorganisational relations: centrality and autonomy. In the first part an introduction is given to these concepts, then I sum up the main arguments concerning economic power in the works on the Hungarian economy. The derived hypotheses will be tested using a population of 240: 14 political actors, 24 banks and 202 companies.

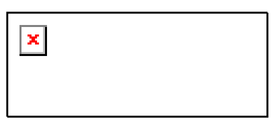
TWO CONSTELLATIONS & THE MEANING OF CORPORATE BOARD INTERLOCKS

There are several works on operationalising power with network concepts. I cite two major concepts in the literature associated with the relations and power in the economy. The first is centrality, the second is autonomy.

Centrality

The most elaborate work built around the concept of centrality is the financial - hegemony theory of Beth Mintz and Michael Scwartz (Mintz - Schwartz 1985, 1986). The basic assumption of their 1985 book *The Power Structure of American Business* is that the interfirm relations can be conceptualised as hegemonic relations. "A hegemonic relationship exists when one corporation makes decisions that directly and significantly affect the business conditions of another firm. The second firm cannot take actions to nullify the effects or the benefits sought by the first group and therefore cannot achieve mutual deterrence. The second corporation is constrained to adopt strategies" (Mintz - Scwartz 1985 pp 14.). They hypothesised, that banks will be the most central actors in the network because of their control over the sources of credit. They also concluded, that the change in bank centrality in time should reflect the changing importance of these banks in the flow of capital.

The following measure of centrality was used by Mintz and Schwartz in their cited book:



where *R* is the a sociomatrix, *e* is the centrality of the given vertex. Putting it another way *e* is an eigenvector of *R* with *l* eigenvalue (Bonacich 1987). There is an advanced version of this measure that weights indirect ties (the connections of the neighbours to their neighbours), also by Philip Bonacich. There is a *b* parameter, that is an adjustable weight to indirect ties. The measure is calculated the following way:

where *c* is the centrality of the given vertex, and *a* is a parameter which allows, that if the centrality of a vertex is one, that means an average centrality independent of the number of vertices. *b* parameter is the mentioned weight. This measure takes indirect ties into account, but we can also utilise a measure that makes it possible to assess, to what extent are actors *in the middle* of the network in the sense that they are between many others. The so-called betweenness centraliy is calculated the following way:

where centrality for a given actor *i* is calculated to sum up the number of geodesic paths between two distinct actors, *j* and *k* that passes through *i.* (if there are more geodesics, these are weighted equally to give a sum of one).

Autonomy

The concept and measure of structural autonomy was developed by Ronald Burt (1992). He has utilised the concept in analysing the cooptational relations of firms proportional to their structural constraint in buyer - supplier relations (Burt 1978, 1983). The idea was summarised in his 1992 book *Structural Holes.* The reasoning departs from the idea, that social capital is not directly proportional to the number of relations one has. The key is the concept of *redundancy*. Two contacts are redundant to the extent that they lead to the same alters. In an efficient network there are no redundancies, that is all connections are separated by a structural hole. The lack of structural holes mean structural constraint on ego.

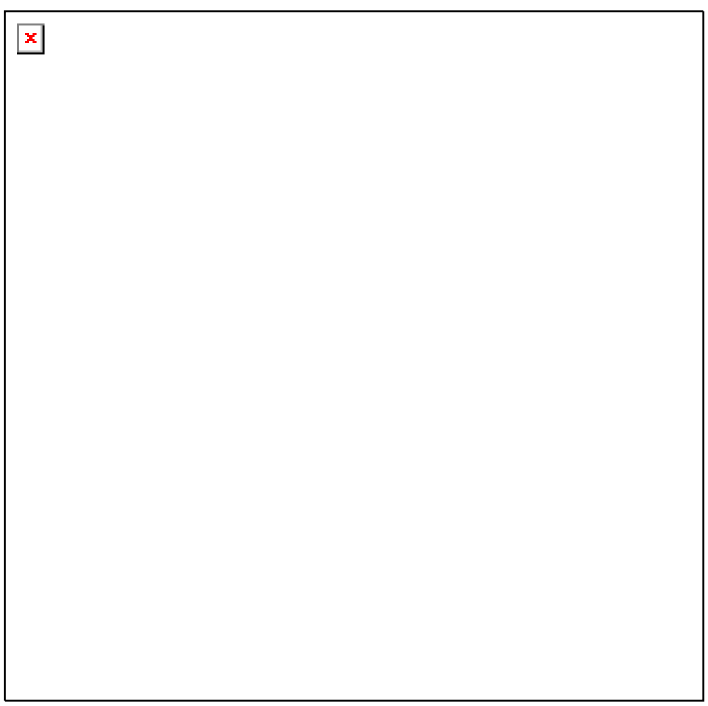


Figure 1. Structural Constraint

There are two components in measuring structural constraint: the costs or energy invested in reaching an alter, and the lack of structural holes around the alter. Burt uses the same measure for the two concepts:

where p_{ij} is the direct investment of ego (i) in reaching alter (j) the summed expression is the indirect investment of i (through ties with any q) to reach j (where q is tied to i and j). This value is high, if i invested a lot of energy proportionally in reaching j, and there are few structural holes around j. The measure of structural constraint is the above expression squared:

Centrality itself is not a cause for power, only an indication. Autonomy can be a source of power itself: there is a causal mechanism, that connect a constellation characterised by autonomy and power. A firm in an autonomous position has more chance to follow "tertius gaudens" strategies, has more opportunities to form coalitions, or discriminate prices. Centrality is an indication of an underlying asymmetry. In the case of banks this asymmetry is the disposition over capital. In the case of the state it can be political power.

HYPOTHESES ON INTERORGANISATIONAL CONSTELLATIONS IN THE HUNGARIAN CONTEXT

The question of economic power has also been put in the Hungarian context of the market transformation. There were three main paths in the social science discourse where this question appears: the first is the discourse of *privatisation*, mostly participated by economists. The second one is a recently started debate over the *position and role of banks in the economy*, we find sociologists and economists here, the approaches has a wide range from information economics through macroeconomics and case studies to the study of ownership relations and interlocking directorates. The third is the debate in economic sociology known as the *market transition* debate, mostly with economic sociologists. Let us take a bit closer look on the hypotheses that can be drawn from these debates.

The debate of privatisation concerns the process of dismantling the high ownership centrality of the state. The recent articles on privatisation and ownership relations suggest, that the privatisation is practically over. Imre Kovách and András Csite propose in their recent article, that the period of post - communism is over, a stable, market-like system has emerged. It would be beyond the scope of this paper to even sketch the sizeable discourse of privatisation, I will only derive some hypotheses concerning the end of this process.

If privatisation is nearing its end, we can expect, that the State Privatisation Agency will have a control mostly over the "remaining" companies, that have the state as the most important owner, and has a poorer market performance. This "portfolio" should be worse, than the portfolio connected to other key political actors, who in turn, should have firms with a more diverse ownership palette around.

The bank power - debate has a double face: economists argue in line with the principles of information economics, that banks are victims of an information asymmetry. On the other hand sociologists argue, that banks are in power positions. According to the reasoning of economists banks use corporate governance tools to overcome this asymmetry, caused by debtors, who know more about the risks of the debt in question. Júlia Király has hypothesised four idealtypical groups of firms according to their bank relation. The first is a group of *companies remained indebted*, mostly those large state owned companies that provided most of the production in 1987. At the times of the return to the two tier banking system the credits of these companies were inherited by the new banks. Needless to say, these credits were not based on prudential bank practices. The second group consist of companies *became indebted quickly* in the beginning of the nineties, mostly smaller companies formed of state owned firms. These middle sized enterprises had no debt in 1987, actually they were mostly formed in the nineties, and they were growing rapidly of foreign capital. They were much affected by the shockwave of loosing eastern markets. In the third group we find firms that *quitted banks*. These companies managed to repay debt, and became independent of banks. These companies were mostly privatised by capital injection. The fourth group consists of the best corporations that never had significant debt, and are financed from internal sources, or bounds. These companies are mostly the most important exporters.

To sum up this line of arguments, we can hypothesise, that banks will be mostly related to two groups: large and small companies, both performing poorer, than the others. We can also expect that if banks use interlocks as a governance tool in case of poorly performing firms, than this also reflects in the data. One remark need to be made here: throughout the paper I will separate the groups of home founded banks and banks founded by foreigners. These two groups has different histories (inherited clients from socialism, state bailouts etc.), and also embedded in a very different way in the network.

In the debate of market transition the question of economic power appeared only occasionally, and mostly tied to the question of elite mobility. This discourse is dominated by the school(s) of social mobility, what implies that the question of power is not a central one. In the beginning of the discourse the notion of elite continuity and political capitalism were the heading concepts, later on the theory of managerialism appeared, as an alternative. The hypotheses included in the theory of post-socialist managerialism formulated by Iván Szelényi focuses on the constellations of the largest enterprises (Szelényi *et al.* 1996). In the special "post-communist" conceptualisation of managerial-ism a crucial assumption is the corporate independence of "real" owners, similarly to the classic theories of managerialism (although Szelényi' s approach and interest is different to these theories, rather oriented towards the new class theories). This independence flows from the recombinant property structure of the transformation (Stark 1996). Managers exercise control over the large corporations not because of their ownership stakes, but because of their skills and education. The key figures are the "financial managers" in this system.

Szelényi and his colleagues' theory implies (in an implicit way) the following hypotheses on corporate interlocks: first we can assume, that the net effect of the absence of "real" owners -- mostly foreign owners -- allows a space for managerial interorganisational control. Second, we can also assume, that the largest enterprises will not be isolated of each other, but will rather form a cohesive group. Third, we can expect, that banks will be interlocked with large companies, and companies without "real" owners.

TRACING CONSTELLATIONS: CENTRALITY AND/OR AUTONOMY?

Data

For assembling the relational database we have collected data on the board and top management compositions of the top 350 companies in Hungary according to their gross revenue in 1995, and for the full population of banks. We have also collected the lists of top and middle rank leaders of the departments of the Hungarian Government, and the lists of names for the parliament fractions of political parties.

We distinguished two types of ties: directed and nondirected. A directed tie means that a manager of a bank or company or a political leader sits on a board of another bank or company. A nondirected tie means that there is a person on two boards without any identifiable "sending" organisation. Besides relational data we also had some variables from company CD ROMs.

Basic structural features

Before taking a closer look at the structure of relations, one feature is apparent. Ninety percent of the actors (that are not isolates) in the network are organised in a single bi - component of directorate ties (in other words this group needs at least two ties to be cut to fall to two groups). This means that there is practically one single net of companies. Something similar is reflected in the following fragment from an interview, that I conducted with the CFO of one of the top 50 companies in the spring of 1997:

"This country is not quite big. That means it is quite difficult to find someone who is not known, especially among those, who are important in business. Business is not made because of these relations, but there are no others to make business with. For me,

personally it is difficult to go to a bank or investment fund, and not to find many people there whom I have known before."

This suggests that this network serves as a background for business. The ten percent that is not part of the network are mostly foreign owned companies, or affiliations to multinationals. In the one third of isolates, that are not part of the population such companies are also over-represented. This suggest, that a company is either a part of the network or it is an isolate -- there are no totally separate components.

Mapping constellations: positions in the field

For mapping the distribution of constellations in the field let us take a look on the overall map of positions. For constructing the map I have organised the two different relations (directed management-board ties and nondirected board-board ties) into a 240*720 matrix. The rows contained data of firms on the sent directed ties, on the received directed ties (through including the transpose of the previous matrix) and on nondirected ties. At the next step I have calculated the correlations of rows in the mentioned 240*720 matrix, thus receiving a 240*240 matrix with Pearson product moment correlation coefficients in the cells, where x_{ij} shows the similarity of node i and j with respect to sent, received and nondirected ties. To represent the structure of the field where the divisions are defined by similarity and dissimilarity I have used non-metric multidimensional scaling (the MINISSA algorithm) available in UCINET V (Borgatti et al 1999) social network analysis software. Figure 2 is a representation of the field in two dimensions.

The first feature that is apparent is the core - periphery structure of the diagram. This can be a misleading observation, in fact it is a *reversed core - periphery field*. Nodes in the middle are at the intersection points of the derived axes. Let us leave the "core" for a minute and take a look at the "peripheries". On the right hand side (or on the eastern side) of the map we find the subfield of political actors. The two most central actors in the network are the APV Rt (State Privatisation Agency) and the Department of Finance. These two actors are at one pole of the map with the other central political actors around. North from the central zone there is a subfield of large corporations. The banks in this area are large, originally state founded banks, the corporations are also among the top 50, usually with a longer past. These two poles are not only easy to differentiate, but, according to my interpretation they constitute two major *styles* in the field of economic relations, that is: these poles represent different constellations. The "core", the area at the intersection of the axes represent firms that are not participating intensively and interestingly in the network of interlocking directorates and they are mostly organised into separated dyads, or they are hangers-on for large banks and big companies.

These two styles are not deterministic. The interesting cases are the banks that are connected to others not in the style of banks. We can see two banks near to the political pole. These two banks are mostly connected to the firms that are bound to the state. Both are state founded investment banks. We also find banks in the middle area and two banks around. These are the affiliations of large multinational banks. The most puzzling cases are the banks on the northern side, together with the previously mentioned one from the south-western side: these banks are connected just the opposite way as banks usually do.

The horizontal axis is associated with political actors and foreign actors, as the MDS diagram of the correlations of axes and the most important attributes reveals (figure 3). The vertical axis has the larger companies (both in terms of revenue or employees or capital) near to its positive pole, usually with a longer history (greater number of years of existence), and state ownership. We also find the home founded banks here. (The striking difference between home and foreign founded banks in their network positions is obvious.)

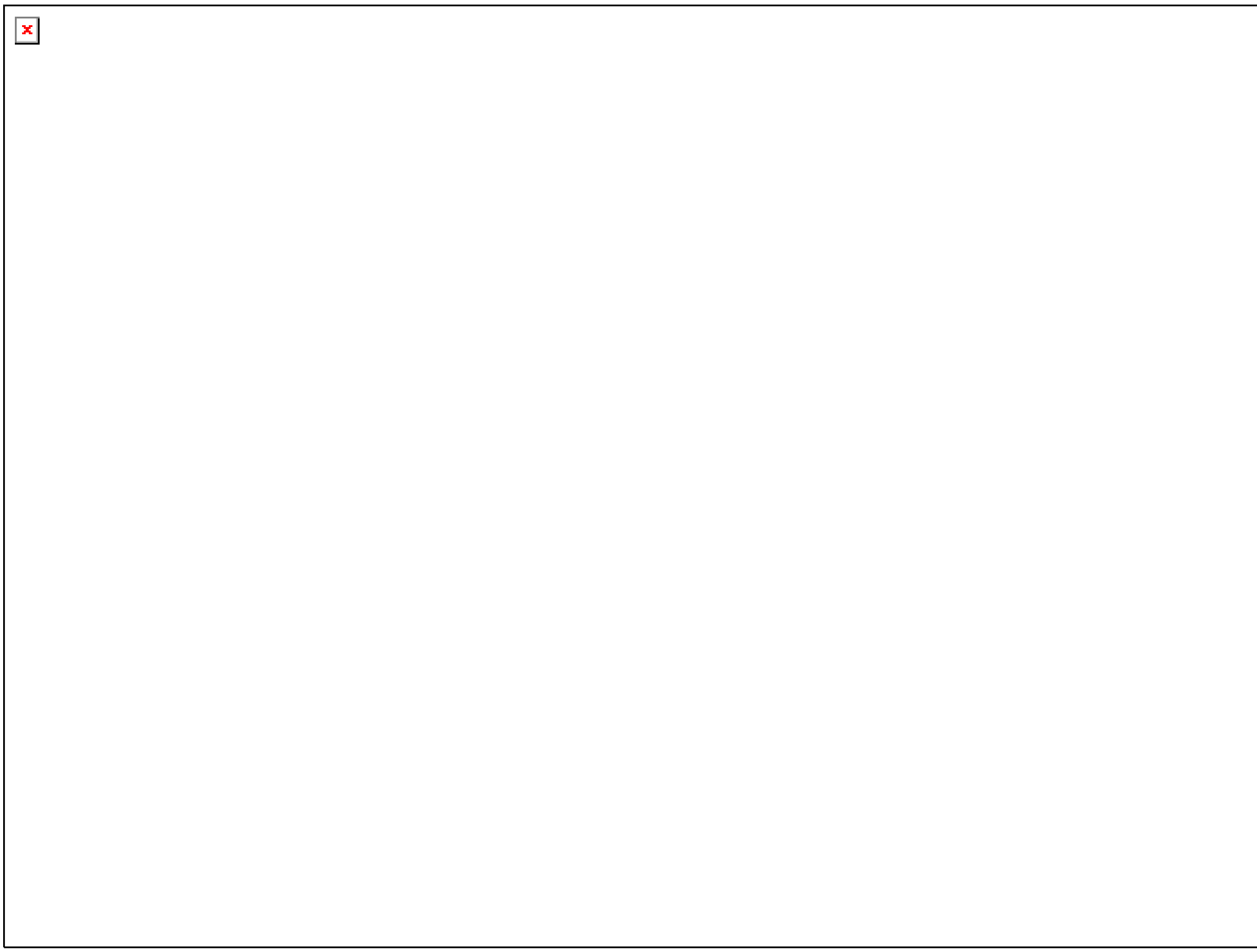


Figure 2: The field of economic relations. MDS, stress = 0.331, MINISSA algorithm based on correlations, N = 240.

Modelling constellations: centrality and/or autonomy?

We can conclude, that the field of positions revealed two major types of constellations. The task now is to discover, whether these two poles are associated to the mentioned types: centrality and autonomy. For coming to a decision on this question, I have used regression models.

There are two groups of models: one for centrality, and one for autonomy. Let us see the models of centrality first.

In the first groups of models (see table 1) there are three dependent variables employed. The first is outdegree, that is a raw measure for the embeddedness of each actor. The second is the Bonacich Power measure, that is a centrality measure taking indirect ties also into account. The third dependent variable is betweenness centrality, that takes the "inevitability" of each actor into account, measuring how much each actor is in the middle of the network. In the case of the latter two, outdegree is also employed as a control variable. The independent variables are the dummies of the groups: departments of the Government (including the State Privatisation Agency), the parliament fractions of political parties, home funded banks, other banks, the top 50 and the "smallest" 50 in the sample. So the group of reference is the group of the "middle" 100 firms.

In the first model we can see, that the embeddedness of the government actors, the home founded banks and the top 50 companies is stronger according to their outdegree, than that of the other groups. In the second model, the model of Bonacich power measure, we find similar results, so, the constellation of centrality measured this way is a feature of the government, home founded banks and the top 50. If we control for outdegree, we can see that only the effect of outdegree is signifi cant. In fact, in this case, the Bonacich power measure is strongly correlated to outdegree (the actors with higher outdegrees connect to others with higher outdegrees), that is reflected in the high R square. The models of betweenness reveals a split among the most embedded actors. In the fourth model we can see, that the there are two groups with a high betweenness: government departments and home founded banks. The group of top 50 is not significantly more in the middle of the networks, than others. If the control for outdegree is included, the only significant variable is the one of the top 50: they have significantly less betweenness compared to their embeddedness, than others. Government actors and home founded banks are "in the middle" of the network because of their higher embeddedness.

Table 1: Models of centrality and autonomy. Group: all actors, N=240. Number of random permutations: 5000.

	MODEL					
	CENTRALITY					
	1	**2**	**3**	**4**	**5**	

dependent variable	OUTDEGREE	BONACICH POWER	BONACICH POWER	BETWEENNESS	BETWEENNESS	STR CON
adjusted R square	0.273	0.2	0.736	0.086	0.289	
F value	16.216***	11.130***	96.890***	4.945***	15.039***	9
independent variable						
Intercept	2.1737	10.45	3.8347	196.6291	67.5892	
OUTDEGREE	-	-	3.0433***	-	59.3635***	
GOVERNMENT	11.0485***	26.8061***	-6.8178	671.2678***	15.3892	-0
PARTY	0.6262	-3.9372	-5.8432	-50.9791	-88.1572	
HOME FOUNDED BANK	6.1861***	23.0452***	4.219	493.0495***	125.8193	-0
OTHER BANK	-0.2401	-4.0896	-3.3589	-64.56	-50.3064	
TOP 50	1.2425*	6.3008**	2.5193	-450734	-118.8360*	-0
SMALL 50	-0.4689	-1.548	-0.121	-2.5631	25.2736	

*: p<.10 **: p<.05 ***: p<.01 †: Smaller values mean lesser constraint, thus higher autonomy.

Figure 3: Interpreting the axes. MDS diagram of the correlations of the most important variables
and the co-ordinates of the previous map.

To sum up the experiences on the constellation of centrality, we can state, that the most embedded actors are government departments, home founded banks and the top 50. Embeddedness usually comes with betweenness, expect in the case of the top 50.

In the second group of models the question is autonomy. These models are constructed the same way, with structural constraint as a dependent variable.

Without a control for outdegree, we find that the most embedded three groups of actors are also less constrained. In the case of constraint, a control for outdegree is theoretically advisable. The measure of constraint decreases with an increase in outdegree. If we introduce this control we find that only home founded banks and the top 50 are significantly less constrained (more autonomous), than others, the government departments has a constraint proportional to their high outdegrees. The group of the smallest 50 companies in the sample has a significantly higher structural constraint (that is lesser autonomy), that is not only a function of their small outdegrees.

Introducing the control for outdegree has increased the fit of the model considerably. I have computed the models with omitting the three most embedded, and the least embedded actors (with an outdegree of one) also, but these models yielded the same results.

For summing up the models of constellations (see figure 4), we can state that the constellation of centrality is a feature of the government actors and home founded banks, and to some extent of the top 50. The constellation of autonomy is more probable around home founded banks and the top 50. So the government is central, but not autonomous beyond its centrality, the home founded banks are central and autonomous, the top 50 companies are central to some extent, but they are more autonomous than others, beyond the effect of embeddedness.

Figure 4: The profiles of constellations: group averages.
The variables are normalised to have equal maximums.

Now let us return to the map of positions. We found two poles, two different constellations, the question to answer is how these poles correlate to the divisions in centrality and autonomy.

In table 2 we can read that the different definitions of centrality almost equally fit to both poles of the map. Bonacich power is closer linked to the pole of large corporations (north according to the vertical dimension). The striking difference is in the autonomy of the two poles: the northern pole with large corporations and banks is more autonomous, than the south, while the eastern pole with political actors and foreign owned companies is more constrained, than the western pole.

Table 2: The location of the constellation variables in the map of positions

	standardised regression coefficients				
	independent variable				
dependent variable	outdegree	Bonacich power	betweenness	constraint	constraint
horizontal dimension (to the east)	0.3071***	0.1078**	0.1476**	0.0141	0.2769***
vertical dimension (to the north)	0.2586***	0.5618***	0.1288**	-0.2774***	-0.1927***

*: p<.10, **: p<.05, ***: p<.01, effect controlled by outdegree

The cells contain univariate standardised regression coefficients (correlations); the last model contains the effect of constraint on location net of outdegree. Cases: all cases, N=240. Number of random permutations: 5000.

Tracing linked qualities: birds of a feather?

After mapping the constellations in the field of the most important actors in the economy, let us turn to mapping the qualities of these actors. The qualities -- if power is in question -- are not isolated, but qualities of a dyad. In the preceding paragraphs we were asking ***how*** the actors in the field are connected, tracing two constellations. Now the question is ***to whom*** the groups mentioned before are tied to.

Figure 5 shows how the groups are tied to each other. The elevations in the relational map are proportional to the densities in the ten blocks of interlock relations. The ten blocks are formed to contain a comparable number of actors: the first block consists of the fifteen political actors -- government departments and political party fractions. The second is a block of banks: the total number of home founded and other banks sum up to twenty-four. The 203 population of companies are divided into groups of 25 or 26, sorted in descending order according to their gross revenue.

The most explicit feature is the high centrality of the political actors, banks and large corporations. Political actors are most densely tied to large corporations and banks. These two groups seem to be rather cohesive also. Smaller companies are hanging on the most central groups. The "smallest" seem to be connected to banks, while the middle category to all central actors to some extent.

The density table refers to the presence of centrality. Constraint can be mapped in a similar way to elevations of highly constrained blocks. In the next diagram (figure 6), contact specific constraints are mapped the same way, as densities, calculating the average constraint from each group to each other.

The map of constraints reveal that the most central groups place constraint on the less central ones. Banks also constrain other banks that can be said in the case of large corporations also to some extent.

Modelling linked qualities

To assess the hypotheses and to reveal the structure of linked qualities, I have constructed linear regression models for the qualities linked to the most important groups of actors. The dependent variables in these models are the number of incoming ties at each actor from the specified group. There are four such variables: the first is the number of ties from the SPA (State Privatisation Agency), the second is the number of ties from other government departments, the third is the number of ties from home founded banks, and the fourth is the number of ties from the top 50 companies. The independent variables are the following: INDEGREE, for controlling size effects, FOUNDED AFTER 1990: equals one, if the company or bank was founded after 1990, zero otherwise, HUNGARIAN PRIVATE PROPERTY: equals one, if the unit is in a Hungarian non-state majority ownership, STATE PROPERTY: the same for state ownership, HOME FOUNDED BANK: equals one in case a bank were not founded by foreigners, OTHER BANK: equals one, if the bank was founded by multinational, or foreign banks, or others, TOP 50: equals one, if it is a top 50 non-bank company, SMALL 50: the same for the smallest 50, GROWTH: equals one, if the company or bank had a growing market stake in real terms both in 1994 and 1995. These models only contain the non-political actors, since political actors do not have boards, thus they don't have an in-degree.

In the first model in table 3 we can see that companies (or banks) have significantly more ties from the State Privatisation Agency, than the reference group. This is also true for top 50 companies and home founded banks. Companies with a stable growth are not likely to have a director from SPA, an SPA link usually means poorer performance. The second model shows the effects with a control for indegree. In this model, besides indegree, the only significant effect is the one of the top 50 companies. This means that SPA directors are only over-represented on top 50 boards, state owned and not growing companies or banks have SPA directors only proportional to their larger indegrees. For assessing the hypotheses derived from the discourse of privatisation, let us see the models of the other government departments.

In the model of government actors we find a similar setting, than in the SPA models. In the third model, without a control for indegree, we find that the departments are even more tied to state owned companies, they are also tied to the top 50 and to home founded banks, but poor market performance is not a feature of their network surroundings. In the fourth model only state ownership and top 50 firms seem to be tied to departments beyond their embeddedness (indegrees). The hypothesis, that the SPA have companies with poorer performance around (the "rest" that have remained) seems to be reinforceable: the SPA is tied to companies with significantly worse growth than others, while this is not true to other key political actors. The other hypothesis, namely that government departments should have ties to companies not only state ownership is not true. The affiliation of government departments to companies owned mostly by the state is stronger, compared to the SPA.

In the first model of the number of directors from home founded banks we find that firs of all these banks are tied to other such banks. There are two other significant effects, namely that these banks are tied to the smallest 50 firms in the sample, and they are also tied to firms with domestic owners, rather than with other kind of owners. The companies founded after 1990 also seem to have more bank directors, but this effect is just not significant (p=0.133). Anyway, banks are don' t seem to be tied to older companies. If we control for indegree, we see that banks have directors from other banks only to the extent, that they have many external directors on their boards. Small companies (or we should rather say, not so large companies) have bank directors on their boards in spite of their small indegrees. The companies, that have proportionally more bank directors on their boards, seem to be more profitable also. The map of constraint also suggests, that the these smaller firms are also the sources of autonomy for banks.

Table 3: Models for linked qualities. Group: business organisations, N=225. Number of random permutations: 5000.

	MODEL					
	1	**2**	**3**	**4**	**5**	**6**
	TIES FROM...					
dependent variable	SPA	SPA	OTHER GOVERNMENT	OTHER GOVERNMENT	HOME FOUNDED BANKS	HOME FOUNDED BANKS
adjusted R square	0.042	0.138	0.104	0.196	0.036	0.313
F value	2.364**	5.109***	4.368***	7.193***	2.164*	12.518***
Intercept	0.1263	-0.0196	0.1746	-0.046	0.2391	-0.2757
INDEGREE	-	0.0544***	-	0.0823***	-	0.1922***
FOUNDED AFTER 1990	0.0092	0.0097	-0.04832	-0.0475	0.1519†	0.1536
HUNGARIAN PRIVATE PROPERTY	0.0605	0.0097	0.0247	-0.0532	0.2409*	0.059
STATE PROPERTY	0.1402*	0.0949	0.4982***	0.4289***	0.0565	-0.1051
HOME FOUNDED BANK	0.2357**	0.0367	0.5152***	0.2142	0.7693***	0.0671

	OTHER BANK	-0.0672	-0.0392	0.1037	0.146	-0.1252	-0.0264
	TOP 50	0.1742**	0.1151*	0.2919**	0.2025*	0.1362	-0.0723
	SMALL 50	-0.0857	-0.0559	-0.0158	0.0293	0.3197**	0.4250***
	GROWTH	-0.1132**	-0.0774	-0.0349	0.0191	0.0579	0.1843*

*: p<.10 **: p<.05 ***: p<.01 †: p=.13

The bank clientele hypotheses can not be supported according to these models: banks are not tied to large corporations more, than to others. They are tied to small ones, but the companies closely tied to banks seems to be successful also. It suggests that banks overcame the difficulties of the beginning of the nineties in respect of their clientele. The hypothesis of interlocking of banks and large companies implicitly suggested by Iván Szlényi doesn't seem to be true. Banks do not form a cohesive subgroup (they are densely tied to themselves, but not more densely than to others).

The top 50 companies' first model, without controlling for indegree firs of all indicates a cohesion of this group, the effect of the top 50 variable is significantly positive. These companies are also tied to others with state or domestic majority ownership, and home found ed banks. After introducing the indegree variable, as a control for embeddedness, we can fortify the assumption of cohesion: this is the only variable that remained significant (apart of the indegree).

This provides a support for the (again implicit) hypothesis of post communist managerialism: we find a cohesion in the group of the 50 largest companies. The companies with state and domestic majority ownership -- the most likely to be free from a real owner -- also have significantly more ties from the top 50, though such companies do not have more directors from the top 50, if we compare them to others with a same indegree.

CONCLUSIONS

In the network of the most important actors of the Hungarian economy there are two major positions, that can be characterised by two ideal types of constellations. One of the poles is for political power. The government departments are the most characteristic players here together with the State privatisation Agency. The other pole is for economic dominance with the largest enterprises and the major, home founded banks. The political pole is highly central, but not autonomous proportionally to this high embeddedness. The economic pole is also central - expect for the lack of betweenness of the top 50 - but it can be characterised by autonomy also. Autonomy seems to be associated with the most important market actors, while the group of the major banks are autonomous and central by all measures.

Centrality is probably associated with underlying asymmetries: the political power of the state, and the source of credit for banks. Autonomy can be a source of power itself. In the case of banks it may take the form of having diversified connections to the moderate size companies (here the smallest 50), in the case of the top 50 companies it might be a well built network of ties to other top 50 and middle size companies. Maybe the finding that the state is central seems trivial. The aim of this paper was not to show that the state has power, but to put it in a context of relations with other actors. Political power might not be a question as much as bank power. The high centrality of banks in all models suggests the importance of banks in capital flows. Beyond this centrality we find that banks are also autonomous. Though not all banks, only the ones founded by Hungarians (mostly the state or other state-founded banks).

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Regional Trade Agreements as Structural Networks: Implications for Foreign Direct Investment Decisions

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The last few decades have witnessed a proliferation of preferential trade agreements and regional trading blocks. Yet little research has been done to integrate trading block considerations into country attractiveness and foreign direct investment decisions. In this paper, we show how network analysis can be used to study, track, and forecast the structural changes among countries in regional trade agreements. Using intra-regional trade data, we analyze the overall trade structure and the relative positions of countries belonging to the European Union. The results show that certain countries offer better opportunities for within-EU market penetration than do others. Our approach provides managers with additional criteria for evaluating country attractiveness, therefore, allowing for more comprehensive and informed FDI decisions to be made.

INTRODUCTION

Market attractiveness evaluations drive firms foreign direct investment (FDI) and market entry decisions (Root, 1987). In virtually all cases, the unit of analysis is the country -- that is, the decision to be made is which country or countries to enter and/or invest in. The fields of international management and marketing have researched how firms should and do evaluate market attractiveness. For example, Preble, Rau, and Reichel 's (1988) study on the environmental scanning practices of U.S. multinational firms showed that most managers look at the legal, economic, and political situations in a particular country before assessing the appropriateness of doing business with that country. In terms of market entry decisions, clustering techniques using a variety of economic, political, social, and other country statistics have been used to identify and group countries in terms of their attractiveness (Sethi, 1971; Sethi and Holton, 1973; Johansson and Moinpour, 1977; Cavusgil 1990). Country indicators are also used to help guide foreign direct investment decisions. Agarwal and Ramaswami (1991), for instance, identified two country factors, market potential (country size and growth rate) and investment risk (economic and political uncertainty), as important indicators of FDI. Their findings are similar to those of other studies that showed the importance of specific country characteristics as predictors of FDI (e.g., Larimo *1995;* Woodward and Rolfe 1993).

Among all of the economic, social, political, and other indicators prescribed by researchers, few, however, have studied the impact of regional trade agreements on market selection and FDI decisions. There are a number of compelling reasons why they should. First, preferential trading terms reduce the cost of exporting to member country markets. Locating within a trading block provides lower cost access to member country markets than does exporting to member countries from outside of the block. Second, the costs of serving multiple countries within a trading block may differ depending on the base of operations. That is, strategically locating in one country can lead to greater efficiencies than investing in another country, even though both are members of the same trade agreement. Such efficiencies arise from nation-specific benefits such as lower factor costs, economic rents, and agglomeration economics (e.g., Head, Ries and Swenson 1995; Jones 1980; Sanford and Fink 1997). While such advantages of locating operations within a trading block are straightforward, less obvious is how to determine which countries within the block are more attractive than others. That is, if one goal of investing in European operations is to provide a gateway for serving multiple countries within the European Union (EU), which countries are most attractive on this criterion? And is the relative attractiveness of countries likely to change in the future?

The purpose of this research is two-fold. First, we show how a countrys current and forecasted position in a regional trade network affects its attractiveness. Second, we look at the effects of the formation of a trade or economic union on the member countries of the union in question. To answer the above two-questions, we use within-region trade patterns to study the EU regional trade agreement as a network of countries. The structure of the network describes country interrelationships as a function of the flow of goods between member countries. A countrys specific position in the network can be identified, and serves as an important indicator of its attractiveness vis-à-vis market entry, foreign direct investment, and market withdrawal. As such, the study of regional trade agreement membership using a network analytic approach can be a useful complement to traditional country attractiveness analyses in making strategic market entry and FDI decisions.

Regional trade agreements represent an attempt by a group of countries to increase the flow of trade and investment by reducing direct and indirect trade barriers between them, as well as implement similar trade policies vis-a-vis outsiders. Multinational trade blocks are a major global trend. Most of these blocks are formed by geographically close countries, and revolve around a small group of larger economies (Kotabe and Coutinho 1998). This is further testament to the importance of closeness and proximity in establishing network structures. Proximity in this case refers to both geographic as well as economic and social similarities among countries (Beije and Groenewegen 1992). Such trade and economic conglomerations give the group a bigger role in the world economy, and insures that smaller member countries are not marginalized. In a recent study of future high growth areas, it was shown that world trade and economic growth will be fueled by regional trade conglomerations such as NAFTA, MERCOSUR, ASIAN, and the EU (Czinkota and Ronkainen 1997).

The common trading policies and preferential treatment for member countries created by a trade agreement have the double effect of promoting intraregional trade, while, at the same time, putting outsiders at a disadvantage. This has two major implications for investors. First, due to the liability of being an outsider, many companies decide to set up shop inside a trade area in order to benefit from the intraregional preferential arrangements. Second, in most cases, countries do not stop at homogenizing their trade policies, but rather move towards greater trade and economic integration. This is further evident in the continuously increasing degree of integration between the economies of Western Europe. Such trends create greater market similarities as laws and business practices are standardized within the region. Market similarities have been identified in the literature as an important determinant in foreign market selection decisions. In addition, costs associated with international commerce can be reduced when doing business in similar markets as harmonization of trade practices reduces the need for adopting different trade approaches for different markets (Davidson, 1983).

Most studies on the processes firms use to make foreign investment decisions incorporate country specific variables. These include both descriptive studies of the information managers use, and prescriptive studies on tools and techniques firms should use to assess country attractiveness. In this paper, we propose that structural variables, which describe the position of specific countries within an integrated trade and investment network offer additional insight and are therefore important to consider. By analyzing the position each country occupies in the flow of goods, services, and capital, a more complete picture of the relative attractiveness of specific countries can be ascertained, and would thus lead to better FDI decisions. Moreover, intra-regional trade networks can be modeled at an industry, or even a specific product category level, enabling mangers to identify the role a country plays in a specific intra-regional trade structure. Therefore, our goal is not to replace conventional approaches for evaluating foreign market entry and investment opportunities. Rather, structural trade data for countries within a trading block should complement economic, political risk, socio-cultural, and industry information widely prescribed for evaluating foreign market investment decisions (Root 1994).

Network analysis provides powerful tools for formal descriptions of complex interaction systems and has been used by a number of researchers to, among other things, analyze the structure of the worlds economy and its evolution over time (Smith and White, 1992; Beije and Groenewegen, 1992; Snyder and Kick, 1979). The focus on relations, and how they change over time, makes network analysis a fitting tool for describing and predicting regional trade structures. The main difference between network analysis and other non network-based approaches used in the area of FDI is that each countrys attractiveness is assessed in terms of its position within the overall regional trade structure. As such, a greater emphasis is placed on the structural attributes versus the country-level statistics per se. In other words, rather than analyzing country attributes such as economic, legal, political and social indicators in isolation, such attributes can be examined in conjunction with the resulting network structures for a more complete assessment. To date, despite the increased use of network analysis in the international management research, such analysis has not been applied to the study of country attractiveness and the possible implication for FDI (Athanassiou, 1999).

A NETWORK ANALYTIC FRAMEWORK FOR ASSESSING THE EVOLUTION OF THE EU

The European Union, established in 1993 via the Maastricht treaty, has the stated goal of furthering economic integration between its member countrie(3) . As one of the most successful and important trade and economic integration areas in the world, the EU alone accounts for over a third of the worlds total trade. The importance of the EU as a regional trade network, and the number of countries involved, makes it a good case study for our analysis.

Because regional trade agreements evolve over time, it is important to make baseline and tracking analyses. For this analysis, the official lunch of the EU as an entity in 1993 is the reference date. We present a longitudinal network analysis of intra-regional trade data for there different years 1990, 1993, and 1997. Only three points in time are selected for reasons of parsimony. In addition, as the formal establishment of the EU in 1993 is our reference point, we believe that this timeline is appropriate to study the effects the EU has on individual countries positions and on the entire trade block. In the selection of network variables to be used, we use the following criteria. First, what positional attributes within a network make a given country more attractive than others for FDI? Second, what overall structural changes in the network may impact future FDI decisions within the network? In regards to the first question, we believe that a countrys structural equivalence and centrality offer the best descriptors of that countrys overall FDI attractiveness with respect to others in the same network. And in regards to the second question, we suggest that centralization, network density, and cohesiveness offer the most informative and parsimonious descriptors of a networks propensity to attract FDI. We proceed below by defining these network variables and offer more specific propositions as to how such variables can be used in formulating more informed FDI decisions in a regional trade network.

Structural equivalence. The first country level structural attribute that may have important implications for FDI decisions is whether any given country is structurally equivalent to another in the same network. Two countries are said to be structurally equivalent if they have qualitatively and quantitatively identical ties to and from all other countries within the network. This strict definition would require that any structurally equivalent countries must have the exact trade structure and value with all others in the trade block. Burt (1980) offers a more relaxed definition and suggests that two actors can be approximately structurally equivalent if they have the same *pattern of ties* to and from other actors (countries).

We suggest that structural equivalence is a useful indicator for the differentiating role of group membership on market attractiveness. As discussed earlier, most firms engage in environmental scanning of economic, political, social, and other factors when evaluating country attractiveness. While we suggest that the network measures of countries that are members of intra-regional trade agreements be included as well, when such countries are structurally equivalent for a given relationship, their "network effects" are equivalent. When they are not structurally equivalent, then differences in individual country centrality and cohesiveness are likely, and network measures will be useful for differentiating country attractiveness. As such, the following proposition is offered:

> ***Proposition 1:*** *Countries within the EU trade network are not structurally equivalent, thus they differ in terms of market attractiveness.*

Country Centrality. In economic approaches to network analysis, degree centrality is synonymous with volume of exportation (e.g., Thompson 1965). Within network analysis, many definitions have been used to measure the concept of centrality (Alba 1973; Bonacich 1987; Freeman 1979, Irwin and Hughes 1992). Degree centrality represents the position of a given actor in a network as a function of the number of direct links it has with the other actors. As such, countries with proportionally large within-EU exports and imports will capture the most central positions in this regional trade network. A country that is more central in the network is expected to be more attractive as a potential hub for within-region trade due to the pre-existence of strong trade ties with all others in the same network. In terms of the flow of goods and/or capital within the trade agreement, exports are represented by the outdegree centrality, while imports are represented by the indegree centrality (i.e., imports and funds flowing into a country). Both are important to capture for any given country since outdegree may be associated with the ease of accessing other markets, while indegree may be associated with the ease of importing goods and services from other markets. Accordingly, we suggest the following proposition:

> ***Proposition 2:*** *Countries within the EU trade network exhibit different levels of degree centralities which affects their attractiveness for FDI.*

Network Centralization. One of the most important effects of trade and economic agreements among a group of countries, is the increased homogeneity within the block. Centralization offers a good assessment of the homogeneity of the roles of countries within any given regional trade network. Centralization is an especially useful indicator when comparing different networks, or in our case, when tracking the structural changes in a network over time. Consequently, and in regards to the EU, we expect centralization to decrease over time as countries become more economically integrated and the disparities among the richer and the poorer members start to diminish. However, the dissimilarities between countries offer early entrants greater opportunities for return. This occurs because drastic changes in the trade structure and the positions of countries within the network happen at the early stages of integration when differences between the countries are greatest. Thus, over time, centrality differences should diminish, thereby changing the relative attractiveness of member countries (previously peripheral countries will become more central and therefore more attractive, while previously central countries will be less so in comparison to others over time). As such, we suggest the following proposition:

> ***Proposition 3:*** *Centralization within the EU trade network is expected to decrease over time indicating a move toward greater homogeneity of the countries in the network In so doing, more countries within the network will become attractive over time.*

Network Density. Network density measures the ratio of existing ties to the maximum number of all ties possible in the network. For valued (non-dichotomous) relationships, network density is the average value of all links between actors (Wasserman and Faust 1994). Network density is also meaningful when studying the evolution of one network overtime. An increase in network density indicates that the member countries in the trading block are becoming more integrated and more dependent on each other for trade and investment.

For the EU, it is expected that density will increase at a higher rate following each major integration initiative. As additional discriminatory trade practices that favor member countries go into effect, intra-regional imports are likely to increase. Net intra-regional exports will increase accordingly. As the intra-regional investment and local production grow, however, out-of-region exports should increase at a faster rate as countries identify and target new markets for their growing exports, and endeavor to bring in foreign currencies (Renato 1997). Therefore, network density for the intra-regional export relationship (expressed in terms of proportion of total exports) should increase in the early stages then level-off and possibly decrease, thus exhibiting an inverted U pattern over an extended period of time. Foreign direct investment into the EU region by non-member countries is expected to increase rapidly in the first years of integration so that foreign firms can become "insiders" and benefit from the favorable within-region trade conditions (Almor and Hirsch, 1995). Intra-regional investments are expected to occur less rapidly, as firms located in the region begin to grow and to expand from their existing base of operations.

A networks density measure is an important indicator of EU countries attractiveness in that firms entry or investment in one country may be the first step toward a planned regional presence. That is, firms may consider entering one of the EU countries, expecting that their presence in the first country will be a beachhead for subsequent expansion. In this case, network density provides an attractiveness indicator of member countries suitability for regional investment and expansion. We therefore propose the following:

> ***Proposition 4:*** *As group-level densities increase within the EU trade network, individual countries become more attractive locations for intra-regional expansion and investment.*

Cohesiveness. Cohesiveness describes the extent to which stronger ties exist between subgroups of actors within a larger network, and is a concept that is especially useful in analyzing the trade structure of a large number of countries. In the case of the EU, identifying cohesive subgroups is equivalent to identifying the countries within the group that have more extensive trade and investment ties between them than with the rest of the group. If performed over multiple points in time, this structural measure can provide insights into the upward and downward mobility of particular countries within the network. Various approaches to assessing cohesiveness exist. One approach suggests setting a threshold value and countries are then identified as belonging to a subgroup as long as the value of their ties exceed the threshold value. A cohesive subgroup within a network provides a fitting target market within a larger market due to the stronger integration between the members of the subgroup. While network density is a good indicator of overall expansion opportunities, cohesiveness provides additional guidance to a step-wise FDI approach that may be adopted in a larger trade and economic block. We therefore propose the following:

> ***Proposition 5:*** *Countries within the EU trade network will have different degrees of subgroup cohesiveness which affects their attractiveness for FDI.*

METHODS

As stated earlier, our goal is to illustrate how network analysis can be employed in formulating superior FDI decisions in the case of a regional trade network. Since the EU continues to evolve and expand to include many more countries, the analysis we conduct is as much illustrative of our approach as it is prescriptive of the market attractiveness of nations within this region.

Trade figures for 1990, 1993, and 1997 were collected from the *Direction of Trade Statistics Yearbook* published annually by the International Monetary Fund. Three matrices representing the flow of goods among EU member countries were compiled. The raw trade figures were translated into percentages of total intraregional trade in order to obtain indicators of any given countrys relative importance, at any given time, with respect to all others in the network. This adjustment is appropriate since our interest is in the changes in both the countries position and trends observed over time rather than the individual values generated by the analysis. The matrices were then analyzed using the UCINET IV computer program (Borgatti, Everett and Freeman 1996) in order to obtain the various FDI relevant network indicators and descriptors introduced earlier.

In addition to demonstrating how network analysis can be used to describe a regional trade networks evolution, another one of our goals is to forecast the networks structure in the future. Using time series analysis on the 1990-1997 intra-regional trade data, we also report how the network is likely to evolve through 2015.(4) In so doing, we can identify countries whose current entry costs may be relatively low, yet afford good short, medium and/or long-term opportunities for intra-regional expansion as depicted by their increasing role in the regional trade network.

FINDINGS

Tables 1 and 2 summarize the results of the network analysis on the EUs trade data. The tables show that Germany, France, Italy, the Netherlands, the UK, and Belgium/Luxembourg have the highest in and out-degree centralities as of 1997. As expected, due to the size of their economies, these countries are the highest intraregional traders. Germany is the most central and prestigious country in the network. These countries represent, in fact, the core of the EU economic region. Of more interest to us, however, is the change over time of the countries positions in this structure. This can be seen through the centrality measure changes between 1990 and 1997, as well as the results of the forecast analysis on the network measures. We report here the results for 2005 and 2015 as indicators of short and long term changes in the aggregate trade network.

While Germany is the most central country in the network, its dominance is expected to decrease as other countries such as the UK, Spain, and Italy (in terms of exports) become more central. The analysis also shows that while Belgium/Luxembourg held somewhat of a central position in the trade network, their role is expected to diminish and become shadowed by that of other larger countries, such as the UK, Spain, and Italy that are expected to become more integrated. Of all countries in the network, the UK, Spain, Italy, Ireland, and Portugal show the highest positive change in their outdegree centrality measures. This indicates that these countries account for a considerable portion of intra-regional export growth. The results also show that Germany, France, Belgium/Luxembourg, and Denmark show a relatively decreasing importance in terms of intraregional exports.

Table 1. Summary of Actual and Forecasted Centrality Measures -- Aggregate Trade

Code	Country	Outdegree (exports)					Indegree (imports)				
		1990	1993	1997	2005	2015	1990	1993	1997	2005	2015
1	Belgium/Lux	0.11	0.12	0.11	0.09	0.07	0.11	0.11	0.10	0.09	0.08
2	Denmark	0.02	0.03	0.02	0.02	0.01	0.02	0.02	0.02	0.03	0.03

3	France	0.17	0.17	0.16	0.16	0.16	0.18	0.17	0.15	0.12	0.08
4	Germany	0.27	0.23	0.23	0.19	0.15	0.23	0.22	0.21	0.19	0.16
5	Greece	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02
6	Ireland	0.02	0.03	0.03	0.04	0.06	0.02	0.02	0.02	0.02	0.02
7	Italy	0.11	0.11	0.11	0.12	0.13	0.13	0.11	0.11	0.09	0.07
8	Netherlands	0.12	0.12	0.12	0.12	0.12	0.10	0.10	0.11	0.11	0.11
9	Portugal	0.02	0.02	0.02	0.03	0.03	0.02	0.02	0.03	0.04	0.05
10	Spain	0.05	0.05	0.07	0.10	0.13	0.06	0.07	0.08	0.10	0.13
11	UK	0.12	0.11	0.13	0.14	0.16	0.12	0.14	0.15	0.18	0.22

In regards to imports, Germany, France, and Belgium/Luxembourg again display a relatively decreasing role within the imports network, while the UK, Spain, and Portugal are playing an increasing role. Among the smaller countries, both Portugal and Ireland showed a significant increase in their centrality measures, while Denmark and Greece displayed zero or a slightly negative change. In summary, the network analysis identifies Germany, France, the Netherlands, Belgium/ Luxembourg, Italy, and the UK as the most central countries in the EU. However, in the short term (2005), and long term (2015), our forecasted network measures identify Spain, Ireland, and the UK as the countries with the highest increases in centrality measures. On the other hand, Germany, France and Belgium are expected to become less central. Germany and France will, however, remain one of the most central countries in the network, and no significant changes were forecasted for the Netherlands and Greece.

Due to the limited nature of the analysis, it is premature at this stage to draw clear and final conclusions. However, it is possible to observe emergent trends. For example, the centrality results show a clear upward trend for some countries and a downward trend for others. Based solely on this aspect of the analysis, one should consider currently central countries that are expected to display the highest increase in degree centrality in the long and short term as primary candidates for investment as these country show higher propensity for both growth and integration. This would include the UK, Spain, and Ireland.

Table 2. Summary of Actual and Forecasted Group-Level Structural Measures -- Aggregate Trade*

	1990	1993	1997	2005	2015
Network Centralization	2.17	1.72	1.65	1.66	1.53

Cliques	1,3,4,8, 11 3,4,10	1,3,4,8,11 3,4,7,10	1,3,4,8,11 3,4,7,10	1,3,4,8,11 3,4,7,10	1,3,4,7,8,10,11
Structural Equivalence	2,5,6,9 1,8	2,5,6,9 1,8	2,5,6,9 1,8 7,11	2,5,6,9 1,7,8,11	2,5,6,9 1,7,8,11

* See Table 1 for country codes

The network centralization index, a measure of how heterogeneous the actor centralities are, exhibited a downward trend. This is in line with the expectations that trade networks lead to an overall increase in integration between member countries. Since centralization is an index of the variability in individual actors centralities, a downward trend indicates a move towards greater integration and homogeneity. That is, previously peripheral countries with low centrality indices become more integrated, thus reducing the disparities between centrality indices. However, this downward trend may not be a smooth one as more countries are invited to join the EU. Therefore, the move towards greater homogeneity manifested by a decrease in centralization, may be offset by the admittance of new members to the network who may start by occupying peripheral positions in the network. From Table 2, it is seen that, as far as the original twelve EU members are concerned, their network centrality will decrease over time. These findings support the previously stated conclusions that important players such as Germany and France become less dominant, while countries such as the UK, Spain, Italy are starting to occupy a more central role. At the same time, previously peripheral countries, such as Ireland and Portugal, are becoming more integrated in the overall EU trade network.

The trade data was then subjected to a clique routine in order to identify cohesive subgroups within the overall trade structure. Two main points are noteworthy from the results in Table 2. First, Germany and France formed the core of every clique in the EU for each of the years analyzed. These two countries, due to the disproportionate value of trade between them compared to all other dyadic ties, are forecasted to continue as the core of the EU trade network well into the future. A second observation from the clique analysis is the presence of mainly two highly cohesive subgroups: a Northern block made up of Germany, France, Belgium/Luxembourg, the Netherlands, and the UK, and a Southern block made up of Italy, and Spain along with Germany and France. Short and long-term forecast analysis shows a general trend towards expansion, then later, merger of separate cliques. Both the Northern and Southern blocks are expected to merge and form a large single cohesive group in the long run. The two different cliques identified above form two sub-economic areas that should be considered first in decisions regarding expansion of operations. This is because cohesive subgroups offer greater similarities than non-cohesive groups (countries among which relatively larger trade and investment ties exist). To consider different cliques is to partition the entire economic area on the basis of the level of economic integration between its members. This additional partitioning criteria can be used to complement other country clustering techniques.

The results of the structural equivalence analysis further support the previous findings (see Table 2; note again that Burts (1980) relaxed definition of approximate structural equivalence is used here). Three different sets of structurally equivalent countries were identified for 1997 --(1) Denmark, Greece, Ireland, and Portugal, (2) Belgium/Luxembourg and the Netherlands, and (3) Italy and the UK. In addition, the forecast analysis results show a relatively stable configuration in that the only major forecasted change is an alignment in the roles of the two sets of structurally equivalent countries where Belgium/Luxembourg, the Netherlands, Italy and the U.K. become collectively structurally equivalent.

As proposed earlier, structural equivalence may be a more useful concept for consolidation decision making. Since countries that are structurally equivalent exhibit a similar pattern of ties with all others in the network, it may be advisable to consolidate operations by limiting the number of structurally equivalent countries in which firms have independent operations. Interestingly, while France and Germany represent good gateways to the EU, evident by their cohesiveness and their membership in every clique identified, they are not structurally equivalent, and thus need to be considered separately in terms of their gateway potential. In contrast, investing in Belgium/ Luxembourg appears to offer the same intra-regional trade access privileges as investing in the Netherlands.

The group-level structural variables and network descriptors are informative if interpreted in their totality. The EU group is constantly becoming more integrated and homogeneous (at least as far as the twelve original members are concerned). France and Germany are the most central players in this network. However, other countries such as Italy, Spain, and the U.K. are expected to close ranks. All five countries have extensive ties with all others in the block, and are strongly tied together. Denmark, Greece, Ireland, and Portugal are on the periphery, but are becoming more integrated with the core and with each other thus offering substantial opportunities for long-term FDI decisions.

MANAGERIAL IMPLICATIONS AND DIRECTIONS FOR FUTURE RESEARCH

Environmental scanning and forecasting are necessary first steps for many international business decisions such as foreign investment. It is thus important to develop sophisticated means for such purposes. When countries under consideration are members of intra-regional trade agreements, it is important to consider the structure of the trade network and each countrys actual and forecasted position in it. Network analysis provides a means for doing so. We reiterate that the structural network analysis is meant to complement, not replace, established approaches for evaluating country and FDI attractiveness.

We have demonstrated a way to use network analysis of trade and investment (flow of goods and capital) between countries in a trade block as a tool to aid managers in evaluating country attractiveness. A number of country and group-level structural variables were identified and propositions were made regarding the future structure of the EU network, and the position of individual countries in the structure. The results helped to illustrate the various positions of member countries, and to identify potential differences in each countrys attractiveness vis-à-vis market entry and FDI decisions.

Future studies on other trading blocks and on specific industries, as opposed to aggregate trade flows, will shed additional light on the value of our approach. Even within the EU, in the near future sufficient data will be available for forecasting the network structure of all member countries (the original twelve plus Austria, Finland, and Sweden). Over time, the relationship between country-level density in a network and return on investment in a particular industry can be investigated. The relative success of network structure vis-à-vis other FDI criteria (i.e., economic conditions, political risk assessment) in explaining operational success and failure will also enrich the FDI literature. In addition, the relationship between density across a number of networks and the overall success of a particular mode of market entry can be investigated to help guide channel decision-making. The ability to use historic data to create, or re-create the network structure of a regional trade block makes these kinds of studies possible.

The analysis demonstrated in this paper can also be applied within a specific industry by using firms and other organizations in that industry as the unit of analysis and assess the formal and informal network structures in place. That is, by identifying major players, cliques, and structurally equivalent players within an industry as well as the formal and social networks that link them, a new entrant may be able to better assess the competitive structure and formulate an appropriate entry strategy. Similar studies of firms within a specific industry can be carried out across national markets to help identify the locations where key players (customers) are located and where industry influence is most prevalent.

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3. The countries included in this analysis are Belgium, Luxembourg, Denmark, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain, and the United Kingdom. Since Austria, Finland and Sweden were not officially admitted until 1994, these countries are not included in the analysis.

4. As mentioned earlier, our analysis includes the 12 original countries in the EU trade network. Because of other countries later entry, insufficient data is currently available for conducting a valid time series analysis on their intra-regional trade data. Over time, these and other late entrant countries can be included in order to provide a more complete assessment of the networks current and future evolution.

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Fitting Social Capital, Informal Job Search, and Labor Market Outcomes in Hungary[(1)]

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Although many studies examined the impact of (both accessed and mobilized) social capital on labor market outcomes, it is not clear what mechanisms are responsible for these "whom do you know" effects. The quest for mechanisms is important when one wishes to compare social capital effects across different societies. This paper explores the empirical implications of three mechanisms (extensive search, intensive search, and favoritism) for the relationship between accessed and mobilized social capital, on the one hand, and labor market outcomes, on the other. The derived implications are tested using data from a survey of young people who completed their secondary vocational education in 1998. I find that high status contacts seem to inform job seekers about jobs with higher income. This contact effect is especially large when the firm has personnel department. Analysis of job offer and job acceptance decisions shows that knowing a high status person increases the likelihood of rejecting a known job offer, and contacts who are employed at the firm do not increase the likelihood that the job seeker is offered the job. These findings imply that the extensive search mechanism is operating.

INTRODUCTION: THE QUEST FOR MECHANISMS(3)

Many studies investigated the relationship between social networks and labor market outcomes (for recent reviews, see Lin 1999, Marsden and Gorman 2000). The lesson from these studies is that although informal search methods are often used, informal methods in general do not lead to better jobs; rather, returns to informal job search in terms of prestige and earnings depends on the characteristics of the contact person. Social resources theory (Lin, Vaughn and Ensel 1981, Lin 1982) argues that useful job information can be received through high status people since they have more knowledge about, and more power to control the distribution of scarce opportunities. The theory of employee referrals (Rees 1966) argues that hiring through current employees is a cheap way of recruiting good (i.e., trustworthy and qualified) workers. Since firms offering good jobs are especially interested in getting good workers (Boxman 1992), and good firms can rely on informal recruitment (Kugler 1997), getting a good job requires the contact person to be employed at the firm.

These findings clearly improve our knowledge about the conditions under which social contacts are useful. Still, our knowledge is incomplete because less attention was paid to the question which mechanism generates these contact effects. Empirical research was motivated by the insight that the assumption of uncertainty and cost-benefit considerations provide a better explanation for the use of social contacts than the assumption that the use of contacts simply reflects employers' preference for hiring friends. If the assumption of uncertainty were the only explanatory paradigm then raising the question of which mechanism is present would be pointless. However, empirical findings also show that the assumption of uncertainty is neither unambiguous nor comprehensive. First, there are two distinct information problems: becoming aware of various job opportunities (extensive search), and collecting in-depth information about the quality of one particular opportunity (intensive search) (Rees 1966). Second, favouritism might be present without making the assumption that employers have preferences against meritocratic selection. Even when employers wish to select on a meritocratic base, they may not be able to do so because their social obligations create incentives to favour the friends of their friends, and the bargaining power of their employees pushes them toward favouring the friends or their employees. As a consequence, three mechanisms (favouritism, extensive search, and intensive search) might be responsible for observed regularities (for overview about mechanisms, see also Coverdill 1998, Marsden and Gorman 2000). Knowledge of which contact characteristics have an impact on labour market outcomes does not reveal which of these mechanisms is present. For example, the effect of contact status is compatible with both the assumption of extensive search (since high status contacts have more knowledge about valuable job opportunities) and that of favouritism (since high status contacts have more power to influence the decision of employers).

This paper suggests a strategy for identifying the mechanism that generates observed regularities. I explore the empirical implications of the above mentioned mechanisms for the relationship between accessed and mobilized social capital, on the one hand, and labour market outcomes, on the other. Implications are tested using recent Hungarian data. Interest in the Hungarian situation is intimately related to the theoretical problem of how to identify mechanisms. Information problems, the bargaining power of employees, and social obligations depend on the institutional environment. Therefore the knowledge of mechanism might entail knowledge of institutional environment. Clearly, evidence about institutional environment is important for the evaluation of transformation processes.

MECHANISMS AND HYPOTHESES

This section explores the implications of various mechanisms for the relationship between net-work/tie effects and labour market outcomes. I will consider two contact characteristics, status and being an employee, that are often found to affect labour market outcomes. As mentioned above, the effect of contact status is compatible with both the assumption of extensive search and that of favouritism. The effect of being an employee is also compatible with two mechanisms: contacting an employee is useful either because employees pass information to the employer and the job seeker (and thereby both learn about each other), or because employees have considerable power to influence hiring decisions. Our objective is to find a procedure which enable us to draw inferences about the existence of mechanisms from observed contact effects. To achieve this, I single out three hypotheses that have the purpose to differentiate between these three mechanisms.

Explaining the Effect of Contact Status: Favouritism Versus Extensive Search

Additional implications of extensive search mechanism are elaborated using standard search theory (see e.g. Mortensen 1986). Consider the following scenario. Job seekers know a job offer and they have to decide about accepting or rejecting it. If job seekers believe that in the future they will receive a better offer they will reject the known offer and search further. Naturally, if the known offer is good then the job seeker accepts the offer. Social resources theory claims that high status people know about various job opportunities. This also can mean that high status people select among these opportunities and they pass the best one to job seekers. If this is true then we arrive at the known hypothesis that high status contacts provide job seekers with better job offers in terms of earnings and status than low status contacts (this is known as the social resources proposition). As mentioned above, this hypothesis can also be derived assuming favouritism. Search theory can help to differentiate between these two explanations. Note that the social resources proposition captures only the incentives to accept a job offer: good jobs are more likely to be accepted than bad job offers, and high status contacts produce good offers. More interestingly, social networks might affect the incentives to reject the known offer. Following the suggestion of Montgomery (1992), network composition in terms of status and network heterogeneity create incentives for rejecting the known offer. If one has high status network members then one can expect even better job accepts in the future since high status people tend to know good jobs. If one has network members in various occupations then one can expect heterogeneous job offers. According to standard search theory, heterogeneity of job offers make people selective in accepting job offers because heterogeity of offers increases the expected value of the highest offer.

To sum up, if extensive search generates the relationship between contact characteristics and labor market outcomes then our application of search theory suggest the following hypothesis:

*(**Extensive Search Hypothesis:**) The likelihood of accepting a job offer is negatively related to the number of high status network members and to the number of different occupations one can access.*

Now I turn to the favouritism mechanism. Favouritism does not suggest network effects in the context of job acceptance decisions. Additional implications can be derived on the assumption that favouritism is constrained by institutional factors. When making hiring decisions and setting wages, employers might be constrained by formal procedures. Especially the presence of personnel departments push employers towards meritocratic procedures (Pfeffer and Cohen 1984). Since it is more easy to formalize job descriptions and wages than to check all details of the application procedure, I expect that personal departments constrain the allocation of jobs to newcomers. Therefore,

*(**Favouritism Hypothesis:**) The returns to contact status in terms of earnings and status is lower in firms where personnel departments exist.*

Explaining the Effect of Employee Referrals: Favouritism Versus Intensive Search

When a job offer is found, job searchers have to collect more information about unobservable aspects of the job, like working conditions, working climate. To collect more information about unobservable details, job seekers might visit the firm. However, this strategy is time consuming, and other applicants might take the job. Obtaining the job information through personal contacts naturally reduces this risk since in-depth information is acquired quickly. Contrary to this, people who heard about the job through formal channels are faced with the risk of having an unpleasant job when they accept the offer. People matched formally either avoid this risk by rejecting the offer, or they take the risk. Accepting a job without much information, however, increases the risk of leaving that job. Since job seekers can be assumed to prefer jobs where they are satisfied with working conditions, keeping status and earnings constant, getting a job through an employee increases the likelihood of accepting the job offer. Unfortunately, this hypothesis can also be derived on the favoritism assumption that current employees have the power to determine who is hired.

The intensive search and favouritism mechanisms can be separated when observing how returns to employee referrals depend on employers' use of interviews. The intensive search mechanism claims that employees transmit information about applicants and employers. Employees may have knowledge of what employers like to see during formal screening. If selection decisions are influenced by the outcome of formal screening, people who heard about the job through an employee will increase their advantage since they receive insider information about how to behave during the interview, or how to present their CV (see Fernandez and Weinberg 1997). Therefore we expect that

(Intensive Search Hypothesis) *The impact of hearing about the job through an employee on the likelihood of being offered the job increases when employers interview the applicants.*

This hypothesis is hard to reconcile with favouritism. More specifically, favouritism implies the opposite of this hypothesis. As described above, favouritism is constrained by formalized selection practices. Thus, we might expect that when employers interview applicants then the room for exercising power is reduced. Thus, under the assumption of favouritism, the impact of hearing about the job through an employee on the likelihood of getting the job decreases when employers use formal screening.

Summary

These hypotheses suggest the following strategy to separate the three mechanisms. First, observe whether status or being employee is the contact characteristic that has an effect on the value of job offer. If contact status has an effect then examine both the impact of personnel departments on returns to contact status, and the impact of network characteristics on job acceptance decisions. If, however, employee has an effect, examine employers' job offer decisions, and check whether there is an interaction between employee contacts and interview.

DATA AND MEASUREMENT

Data come from a recent survey that was conducted among young people who finished their secondary vocational education in 1998. The choice of school-leavers enables us to assess the impact of pre-existing social ties on mobility outcomes in various stages of the job search process. The survey was held in 7 large cities of Hungary. For practical reasons, data collection was restricted to those individuals who were resident in these cities. The sampling procedure consisted in two steps. First, schools in the cities were visited and addresses of school-leavers were collected in order to obtain a sampling frame. Second, individuals were randomly selected from the sampling frame. The respondents were interviewed two times: first between December 1998 and February 1999, then during September-October 1999. This process resulted in 690 interviews.

The analyses reported in this paper use between 436 and 461 cases. Out of the 690 individuals, 612 heard about a job after completing their studies. About 150 cases were deleted due to missing observations. Missing cases occur mainly because interview data are not observed for those who did not apply for the job, and many respondents did not report on the income of the job offer. Our analyses are limited to the extent that no attempt was made at either imputing missing values or modelling nonresponse behaviour.

Our hypotheses refer to both the value of the job offer and the outcomes of the hiring process. This paper uses only one measure for the value of job offer, the natural log of the net monthly earning that was offered to the job seeker. Outcomes of the hiring process are measured with two dummies: being offered a job, and accepting the offer.

The source of job information is captured only by two *characteristics of contact persons*: status and whether they are employed at the firm where the job is located. Note that hearing about the job offer through formal channels or directly correspond to zero values of these dummies. Because no recent Hungarian prestige scale exists, contact status is based on the type of occupation. High status includes managerial, professional, and technical occupations (see Granovetter 1974), while low status contacts work in clerical, service, and (skilled or unskilled) manual occupations. The measurement of employee contacts, on the one hand, and the measurement of formal screening, on the other, are straightforward.

Network characteristics are measured with two variables: knowing high status people, and knowing people in various occupations. Knowing a high status people is a dummy variable identifying those who have at least one high status person among their network members. Network membership was elicited using three name generators: whether the respondent has parents and siblings; whether the respondent has an employed friends; and whether the respondent knows an employed person who could help to find a job for a friend of the respondent. Thus, our measure does not differentiate between family and friendship ties. The number of occupations one can access was based on the Lin-Dumin (1986) technique. Respondents were asked whether they know somebody in certain occupations. The list comprised 17 manual, service, and clerical occupations. Note that I did not include high status occupations in the list. The reason is that the question was intended to reflect access to various industries or workplaces which will be approached by our pupils, rather than access to people with various status. Since I wanted to measure personal networks prior to looking for a job, but the data collection took place when people searched for a job, both the name generators and the Lin-Dumin style questions were retrospective questions.

Besides the variables describing contact and network characteristics, several *control variables* are employed. Control variables were grouped into two blocks: job characteristics, and individual characteristics. The job-level characteristics that might influence the value of job offer are firm size, existence of foreign property in the firm, and the type of occupation. Firm size is measured with a dummy identifying firms with at least 50 employees. The existence of foreign property identifies firms where there is some foreign property. Type of occupation is a dummy identifying white-collar occupations. Individual characteristics include educational level, years of training outside school, sex, living place, being qualified for the job, and the time of the job offer. Educational level is a dum-my indicating those whose vocational education is connected to the general A-level. To some extent, the education dummy captures the type of occupation studied: those who studied technician or clerical occupations obtained an A-level, while many people who studied service and manual occupations attended apprentice schools or classes, where obtaining the general A-level is not possible. Training was included in the analyses because some pupils were trained exclusively within the school, and training outside school was assumed to improve vocational qualifications. Living place was measured in terms of region: this dummy identifies the capital of Hungary, and the 2 other cities in the sample which belong to the economically more developed Western part of the country. The time of job offer is assumed to influence job acceptance decisions. This variable is recorded in months. Value 1 refers to May 1998, the time when individuals were about finishing their studies. Since the last second wave interviews took place in October 1999, the highest value of this variable is 18.

Summary statistics for the variables can be found in Table 1.

Empirical analyses use multivariate regression techniques. Coefficients for variables are computed using familiar OLS and logistic regressions. However, standard errors are computed using the so-called Huber/White/sandwich variance estimates (Greene 1993), with classes as unit of clustering (Rogers 1993). This method takes into account the fact that data come from a multilevel design (individuals are nested within classes, classes are nested within schools, etc.).

TABLE 1: Summary statistics for variables

	Variable	**N**	**Mean**	**S.D.**	**Min**	**Max**
(A)	**Dependent variables**					
	offered monthly net earning (in 1000 HUF)	461	27.62	9.56	5	62
	Job offer was made to the applicant	458	0.95	0.21	0	1
	Applicant accepted offer	436	0.94	0.23	0	1
(B)	**Key explanatory variables**					
	Contact characteristics					
	Hearing about the job informally	461	0.51	0.50	0	1
	High status contact	461	0.14	0.34	0	1
	Contact is employee at the firm	461	0.25	0.43	0	1
	Formal screening					
	applicant was interviewed	461	0.65	0.48	0	1
	personnel department exists	461	0.25	0.43	0	1
	Interaction terms					
	High status contact * interview	461	0.08	0.27	0	1
	High status contact * pers. dep	461	0.05	0.22	0	1
	employee * interview	461	0.16	0.37	0	1
	Network characteristics					
	N of occupations accessed	461	7.56	3.48	0	17
	High status network member	461	0.37	0.48	0	1
(C)	**Control variables**					

	Job characteristics					
	existence of foreign property	461	0.24	0.43	0	1
	more than 50 employees	461	0.24	0.43	0	1
	job is white-collar	461	0.75	0.43	0	1
	Individual characteristics					
	educational level: R. has A-level	461	0.51	0.50	0	1
	years of training outside school	461	1.62	1.37	0	4
	sex (1 if male)	461	0.56	0.50	0	1
	region (1 if west)	461	0.58	0.49	0	1
	time heard about job (in months; 1 = May 1998)	461	5.50	4.52	1	18
	qualified for job	461	0.70	0.46	0	1

EMPIRICAL ANALYSES

Contact Characteristics and Earnings

First, I examine the value of the job offer in terms of earnings. Our main objective is to distinguish between favouritism and extensive search. Both mechanisms are consistent with the social resources proposition (i.e, a positive relationship exists between the value of job offer and contact status), but only favouritism implies that this effect is conditional on the existence of personnel departments.

TABLE 2: Analysis of offered log earnings: OLS coefficients (robust t statistics)

	bivariate results		Models	
		(1)	(2)	-3
Contact Characteristics				
High status contact	0.104		0.087	-0.002
	-1.825		*(1.844)*	*-0.029*
Contact is employee at the firm	0.007		-0.002	-0.028
	-0.201		*(0.049)*	*-0.533*
Formal Screening				
applicant was interviewed	0.121			0.049
	*(3.504)****			*-1.396*
personnel department	0.154			0.002
	*(4.061)****			*-0.048*
Interaction terms				
employee * intervew	0.089			0.017
	*(2.152)**			*-0.261*
high status contact * interview	0.238			0.027
	*(4.557)****			*-0.306*

high status contact * pers. dep	0.346			0.234
	*(4.878)****			*(2.787)***
Characteristics of the job offer				
existence of foreign property	0.262	0.197	0.197	0.175
	*(7.562)****	*(5.465)****	*(5.636)****	*(4.834)****
more than 50 employees	0.104	-0.011	-0.017	-0.029
	*(2.754)***	*(0.303)*	*(0.446)*	*-0.784*
job is white-collar	-0.157	-0.099	-0.092	-0.082
	*(4.565)****	*(3.266)***	*(3.073)***	*(2.803)***
Individual characteristics				
educational level	0.096	0.04	0.045	0.025
	*(2.758)***	*(1.345)*	*(1.493)*	*-0.832*
years of training outside school	-0.025	-0.013	-0.015	-0.016
	*(2.017)**	*(1.147)*	*(1.38)*	*-1.568*
sex (1 if male)	0.118	0.125	0.12	0.108
	*(3.529)****	*(4.291)****	*(4.03)****	*(3.655)****
region (1 if west)	0.267	0.223	0.223	0.223
	*(8.485)****	*(7.734)****	*(7.676)****	*(7.831)****
Constant		3.09	3.08	3.069
		(76.184)***	*(75.006)****	*(65.193)****
R squared		0.266	0.273	0.293

NOTES: N = 461 for all models; * : p<0.05, ** : p<0.01, *** : p<0.001

The intensive search explanation cannot be tested here since it does not imply a positive or negative effect of a contact characteristic. To identify the underlying mechanism, I estimated three multivariate regression models. Model (1) is the baseline model, it includes only the control variables. Model (2) adds contact characteristics to the baseline model to test the social resources proposition. Model (3) introduces interaction effects between formal screening and contact characteristics in order to test the favouritism hypothesis. Note that the interaction terms also include the interaction between employee contacts and being interviewed. This interaction effect controls for the intensive search mechanism. I also present bivariate regression results in order to see the total effects of the variables. Estimation results are displayed in Table 2.

Examining the parameter estimates of control variables in our models might help to check model specification. Mainly the characteristics of the firm and the job that determine the wage offer. As expected, people living in the Western part of the country, men, and people accessing a foreign company have receive better job offers. Contrary to this, white collar jobs are associated with worse earnings. It is interesting to note that educational characteristics do not play an important role (parameter estimates are not significant).

Model (2) indicates that contacts who are employed at the firm do not lead to better offers: the parameter estimate is virtually zero. More difficult is to judge whether contact status has the expected effect: the sign of the coefficient is positive, but not significant at the usual 5 percent level. Nevertheless, the t statistics is relatively large ($t=1.844$, the corresponding p value with $df=251$ is 0.066).

If, despite the nonsignificant parameter estimate, one is willing to accept that contact status has an effect, model (3) can be used to explain this effect. If the returns to contact status become lower in firms where personnel department exist then the favouritism explanation can be accepted. Looking at model (3), only the interaction between personnel department and contact status has a significant coefficient among the interaction effects. However, the sign is positive, which is contrary to our expectations. Thus the favouritism explanation should be rejected.

Job Offers, and Job Acceptance

Next, I turn to the analysis of job offers and job acceptance decisions. If the extensive search mechanism is present then network characteristics should increase the chance of rejecting an offer. Favouritism and intensive search accounts are related to the contact person being employed at the firm. Intensive search suggests that interview enlarges the returns to employee contacts in terms of receiving a job offer since insiders teach applicants how to behave during interviews. Favouritism suggest the opposite: information received through interviews constrain the influence of insiders.

First I examine job offers in order to distinguish between favouritism and intensive search. Both mechanisms are consistent with the importance of receiving job information through employees of the firm where the job is located. The two mechanisms have competing implications about the impact of the interaction between employee contacts and interview. I estimated three multivariate logistic regression models. Model (1) is the baseline model, it includes only the control variables. Model (2) adds contact characteristics to the baseline model. Model (3) introduces interaction effects between interview. I also present bivariate regression results in order to see the total effects of the variables. Estimation results are displayed in Table 3.

The results do not enable us to make a decision about mechanisms. Most of the parameter estimates are statistically not significant. Hearing about a job has the expected positive coefficient in both model (2) and model (3), but the effect is not significant. If both effects were significant, we could conclude that employee contacts have a positive effect on receiving a job offer, and this effect is also present when applicants are interviewed. Note that this conclusion is consistent with the favouritism explanation. The findings do not support the intensive search explanation. Looking at model (3), the sum of the two coefficients is close to zero (1.167-1.199=-0.032), which means that employee contacts have no influence on job offer decisions when employers interview the applicants.

Now I turn to job acceptance decisions in order to test the extensive search explanation. If this explanation is true then network characteristics should have a negative impact on job acceptance decisions. I estimate four multivariate logistic regression models. All models will control for individual characteristics. The first model also includes the monetary value of the job offer.

TABLE 3: Receiving a job offer: Logit estimates (robust z statistics)

	bivariate results		Models	
		-1	(2)	-3
Contact Characteristics				
High status contact	0.487		0.723	0.903
	-0.653		*(0.871)*	*-1.055*
Contact is employee at the firm	0.43		0.435	1.167
	-0.846		*(0.784)*	*-1.1*
Interaction interview * contact				
contact employee * interview	0.225			-1.199
	-0.386			*-0.902*
Applicant was interviewed	0.483			0.945
	-1.092			*-1.939*
Characteristics of the job offer				
existence of foreign property	-0.218	-0.3	-0.371	-0.469
	-0.464	*(0.473)*	*(0.588)*	*-0.707*
more than 50 employees	-0.193	-0.143	-0.304	-0.32
	-0.415	*(0.235)*	*(0.498)*	*-0.515*
job is white-collar	0.374	0.234	0.329	0.382
	-0.709	*(0.412)*	*(0.583)*	*-0.703*
Individual characteristics				
educational level	-0.514	-0.709	-0.655	-0.76
	-1.162	*(1.383)*	*(1.33)*	*-1.544*
years of training outside school	-0.189	-0.253	-0.271	-0.272
	-1.365	*(1.729)*	*(1.946)*	*-1.89*
sex (1 if male)	0.067	0.067	-0.014	-0.02
	-0.141	*(0.132)*	*(0.026)*	*-0.037*
region (1 if west)	0.748	0.855	0.947	0.957
	-1.604	*(1.864)*	*(2.083)**	*(2.117)**
time heard about job	-0.042	-0.041	-0.039	-0.05
	-0.943	*(0.856)*	*(0.793)*	*-0.973*

qualified for job	-0.147	-0.293	-0.35	-0.396
	-0.309	*(0.591)*	*-0.675*	*-0.74*
Constant		3.771	3.618	3.197
		(3.729)***	*(3.632)****	*(3.071)***
Pseudo R^2		0.05	0.06	0.079

NOTES: N = 458 for all models; * : p<0.05, ** : p<0.01, *** : p<0.001
Pseudo R^2 is the percentage reduction in log likelihood, compared to the constant-only model.

Model (2) adds network characteristics to the first model. Models (3) and (4) are similar to the first two models: based on the assumption that job characteristics and the characteristics of the contact person have an impact on the value of wage offer, wages are replaced by job and contact characteristics. Thus, model (3) contains contact and job characteristics, while model (4) also includes network characteristics. The nice feature of model (4) is that contact and network effects can be compared directly. I also estimated bivariate models for each independent variables. Estimation results are shown in Table 4.

Coefficients in models (1) and (2) are surprising: the monetary value of the job offer has a negative, but statistically not significant effect on job acceptance decisions. Network characteristics have the expected negative effect, but only having a high status network member has significant coefficient. Models (3) and (4), which use the determinants of offered wage instead of the value of wage offer, also show the minor role of firm characteristics and the importance of network characteristics in job acceptance decisions. More interestingly, high status contact has a positive coefficient, which means that contacting a high status person might have a positive effect on accepting the job. Unfortunately, the coefficient is not significant at the usual 5 percent level (the z score is 1.805, the corresponding p value is 0.071). Thus, contact and network characteristics (or mobilized and accessed social capital) have opposite effects on job acceptance decisions. Contacting a high status person is likely to increase the value of job offer (see table 2), which creates incentives to take the job. However, knowing a high status person creates incentives to reject the job. The contact effect is larger than the network effect (see the sum of coefficients in model (4): 1.867-1.278=0.589). This means that if mobilizing a high status contact were strictly determined by having access to high status people, then access to high status people would have a positive impact on job acceptance decisions.

The finding that network characteristics have an influence on job acceptance decisions is consistent with the extensive search explanation. The favouritism mechanism cannot account for the fact why network characteristics in themselves have this effect. Also the intensive search explanation can be ruled out. Models (3) and (4) show that neither the main effect of employee contact nor its interaction with interview is significant. Thus, the results support the extensive search explanation.

CONCLUSIONS AND DISCUSSION

This paper addressed the question how can the importance of two contact characteristics, status and being an employee, be explained. I sketched three mechanisms, and I formulated hypotheses that can differentiate among these mechanisms. The hypotheses were tested by examining the impact of contact characteristics on the monetary value of job offer, on getting job offer, and on accepting the offer.

The results can be summarized as follows. First, high status contacts seem to inform job seekers about better job opportunities (keep in mind that the p-value is 0.066). Since personnel departments do not diminish the returns to contact status, the favoritism explanation should be ruled out (see the favoritism hypothesis). Second, the analysis of job offers was not conclusive due to nonsignificant coefficients. I found a negative coefficient for the interaction between employee contacts and interviews. If the coefficient were significant, we could reject the intensive search account (see the intensive search hypothesis). Finally, the analysis of job acceptance decisions support the extensive search explanation: knowing a high status person creates incentives to reject the job offer (see the extensive search hypothesis). To sum up, our analyses support the extensive search explanation.

One objection to this conclusion is the following. Looking at table 1 (panel A), one can see that job offers are very rarely rejected. This observation does not support our argument behind the extensive search hypothesis, namely that applicants are selective in accepting job offers. Although this selectivity assumption is not expressed in numbers, the fact that only 5 percent of people rejected the offer casts doubt on search theory.

Before one generalizes the results, one should keep in mind that findings about contact effects are very often conditional on the outcome studied (Marsden and Hurlbert 1988). In our case, the finding that contact status has an impact on offered wages does not imply that contact status will also have an impact on other job characteristics. Investigating other job characteristics is necessary since the wage offer does not reveal much information about job quality and subsequent earnings. Analyses (not published here) suggest that contact effects are absent when other indicators of good job are used as dependent variables.

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Stata Technical Bulletin 13: 19-23.

1. Paper presented at the International Social Network Conference. Vancouver, April 13-16, 2000

2. Dept. of Sociology / Interuniversity Center for Social Science Theory and Methodology, University of Groningen, Grote Rozenstraat 31, 9712 TG Groningen, The Netherlands. E-Mail: **t.bartus@ppsw.rug.nl**.

3. The paper reflects the current state of research within the PhD research project "Getting the first job in Hungary", which is carried out under the supervision of Tom Snijders, Jules Peschar (University of Groningen), and Beate Völker (University of Utrecht). Their comments are acknowledged.

CONNECTIONS 23(1): 32-42 © 2000 INSNA

See you in the Funny Papers: Cartoons and Social Networks

Linton C. Freeman
University of California, Irvine

From time to time a branch of science captures the imagination of the public; it gets "hot." When that happens, references to the "hot" item appear in newspapers, in novels, in movies -- even in cartoons. Forty odd years ago, for example, Ray Birdwhistell (1952) first introduced kinesics, the field concerned with the importance of non-verbal gestures in human communication. Very soon, Al Capp introduced a new character in his comic strip, *Li'l Abner*. Capp began a series of based on the activities of a "Professor Fleasong," a specialist in the study of "toe gestures."

The field of social network analysis seems to be in that kind of center-stage position today. The fact that social networks is "hot" is indicated by its increasingly frequent appearance in the popular media, particularly in the comics. And, interestingly enough, many of those treatments are quite sophisti-cated. They refer, not just to the network idea, but they often reflect some of the more subtle and sophisticated ideas from our field -- and they do it with wit.

In the present note, I will review some of the cartoons published in the last few years that focus on social net-works. One aim is to entertain. But, at the same time, I will show cartoons that reveal the core ideas behind a wide range of important structural research. Cartoons of this sort might be used to provide the uninitiated with a painless introduction to some key network concepts and research findings.

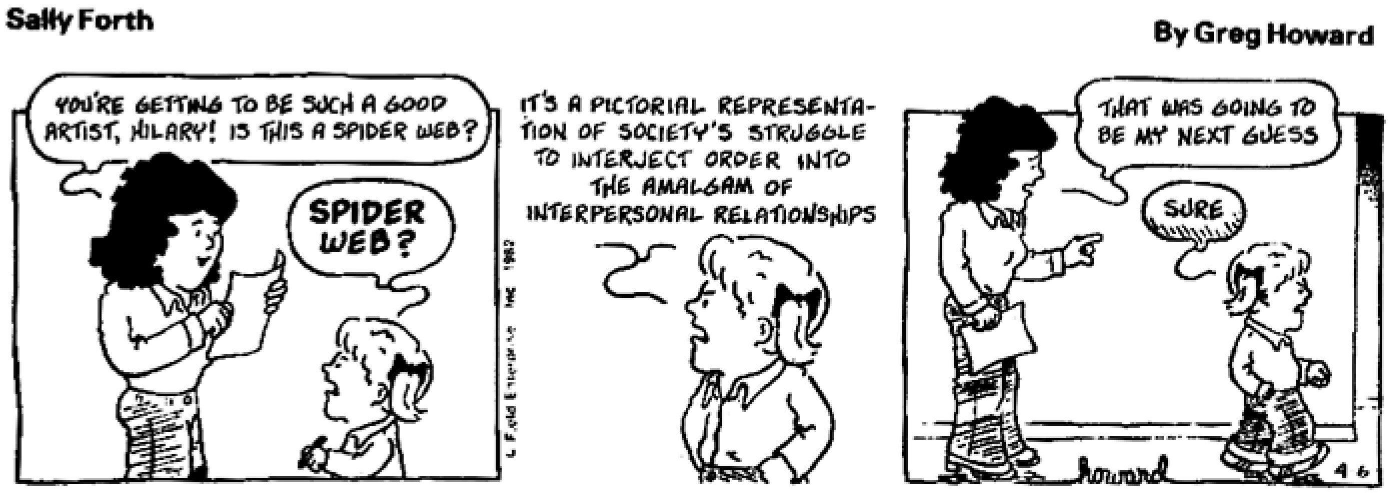

Figure 1.

I'll begin with three illustrations that capture the general concept of social network. Figure 1 shows an image from Greg Howard's comic strip, *Sally Forth*. It provides a very general definition of social networks and calls attention to the structural similarity between patterning of social relations and the notion of a web. Figure 2 is from the comic strip *Cathy* by Cathy Guisewite. Like Figure 1, it defines the general idea of social networks and it proposes two more structural analogies.

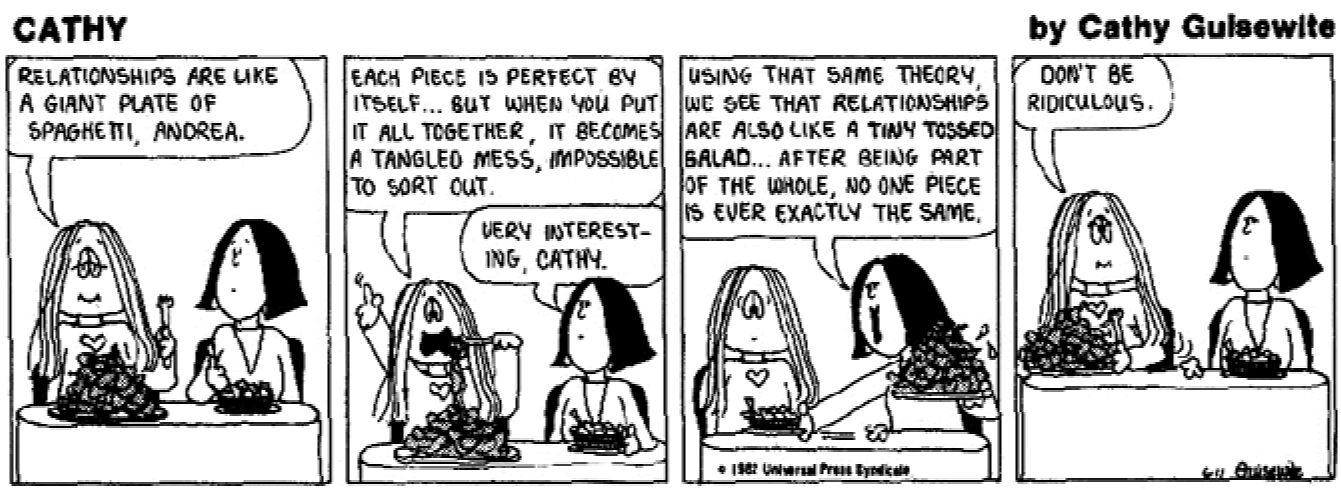

Figure 2.

In contrast, Figure 3 (*Quality Time* by Gail Machlis) embodies the idea of ego networks. At the same time, it calls attention to the issue raised in Ron

Burt's (2000) recent work on the importance of considering the decay of relations over time.

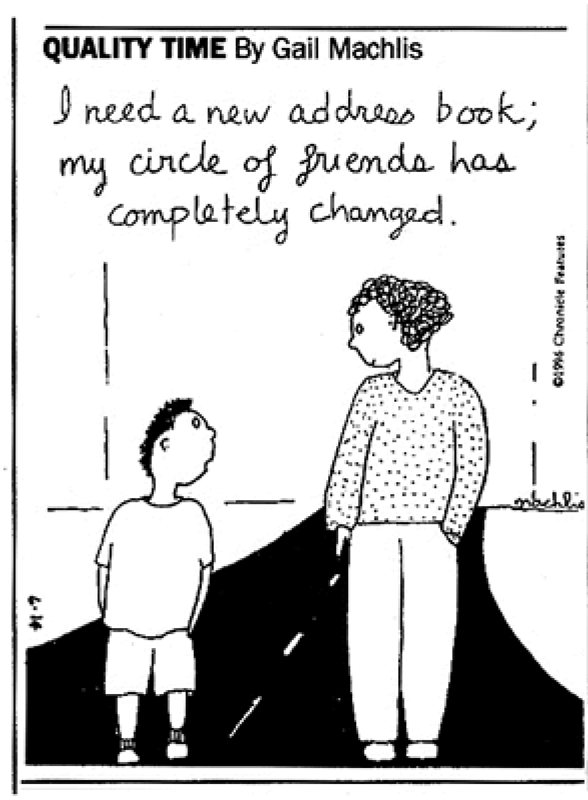

Figure 3.

The next ten cartoons (Figures 4 through 12) all share a concern with the structural properties of social networks. Figures 4, 5 and 6 are all focused on tie strength.

Figure 4.

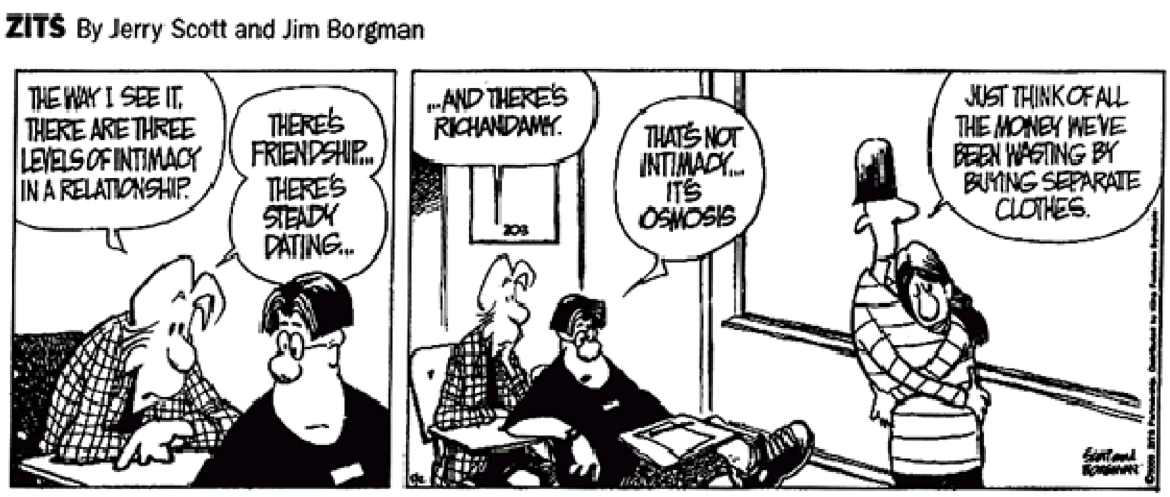

Figure 5.

Figure 4 is *Single Slices* by Peter Kohlsaat. Figure 5 is *Zits* by Jerry Scott and Jim Borgman. Figure 6 is *Blondie* by Dean Young and Denis Lebrun. And Figures 4 and 5, in particular, are concerned with the important problem of how we label a tie in order to reflect how closely the individuals are linked.


BLONDIE By Dean Young and Denis Lebrun
COURTNEY AND I ARE READY TO TAKE OUR RELATIONSHIP TO THE NEXT LEVEL
WHAT LEVEL IS THAT ?
THE LEVEL WHERE WE SHOW TOTAL RESPECT FOR EACH OTHER'S NEEDS
SEPARATE CHECKS ?
RIGHT

Figure 6.


Cathy
by Cathy Guisewite
WHAT WILL SHE SAY ABOUT ME?
PATTY WILL STILL TALK ABOUT YOU, EXCEPT THEN I HAVE TO HEAR HER WEEP ABOUT FRED... JOAN IS WHO I CALL FOR THE GOOD OLD-FASHIONED, "ALL MEN ARE PIGS" PERSPECTIVE...
BRENDA WON'T DISCUSS LOVE LIVES, BUT LOVES TO TALK ABOUT OUR DOGS... KIM HAS NO INTEREST IN DOGS, BUT LOVES TO TALK ABOUT CLOTHES...
I TALK TO KAREN WHEN I'VE BLOWN A DIET... CAROL WHEN I'M STICKING TO A DIET... TERRY WHEN I'M RE-CREATING MYSELF AS A VEGETARIAN...
TO WHOM WILL I SAY IT?
DID YOU TELL ANDREA WE'RE HAVING DINNER TONIGHT, CATHY?
ANDREA?? ARE YOU KIDDING??
I ONLY TALK TO ANDREA ABOUT WORK, NOT MEN... I TALK TO CHARLENE ABOUT MEN, BUT ONLY NEW MEN. SHE'S SICK OF DISCUSSING YOU.
I TALK TO ELLEN ABOUT BOOKS ... JAN ABOUT CHILDREN... SUE ABOUT TRAVEL... LYNDA IF I WANT THE ASTROLOGICAL INTERPRETATION OF ANY OF IT AND MOM, OF COURSE, FOR EVERYTHING IN-BETWEEN!
AS USUAL, SORRY I ASKED...
MEN HAVE A NETWORK. WOMEN HAVE A SATELLITE DISH WITH 200 CHANNELS.
Menu
© 2000 CATHY GUISEWITE distributed by Universal Press Syndicate
4.30 Guisewite

Figure 7.

Cathy Guisewite takes up the problem of specifying kinds of social relationships in the episode of *Cathy* shown in Figure 7. This treatment calls attention to what is probably the greatest weakness in the General Social Survey item on social networks. The item asks about discussions of "important issues" but it neglects to find out what issues were discussed with whom.

"So far I'm doing all right. I went over to t
people, but nine people have come over to t

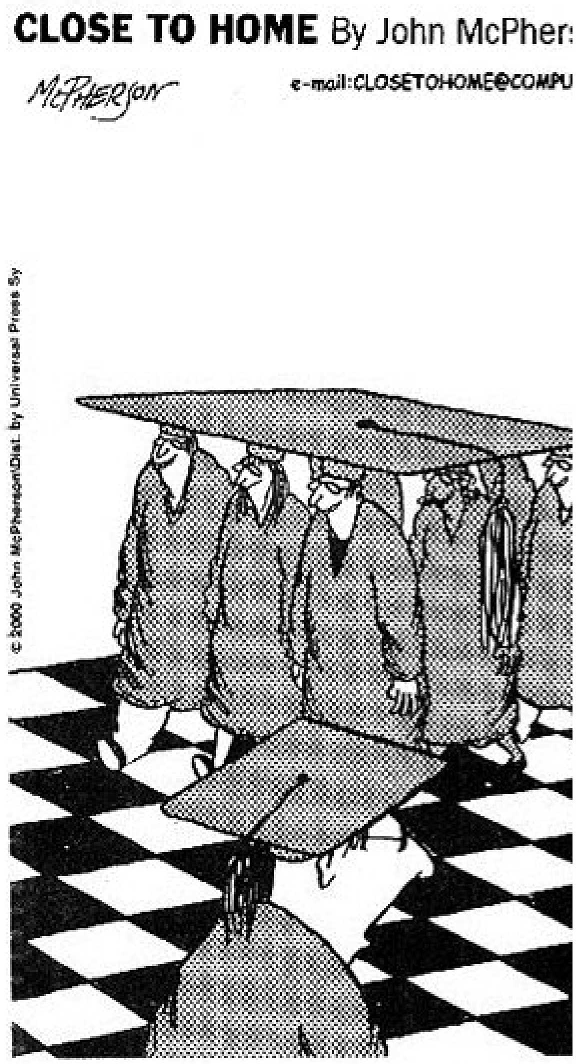

Figure 8.

"They always were a tight little

Figure 9.

Several graph theoretic concepts come up in the funny papers. In Figure 8, for example, W. S. F . . ., in *Human Behavior Magazine*, illustrates the social importance of indegree and outdegree. John McPherson's *Close to Home* in Figure 9 defined a clique. And, as Figures 10 and 11 show, Mel Lazarus regularly draws on graph theory when it comes to drawing *Momma*.

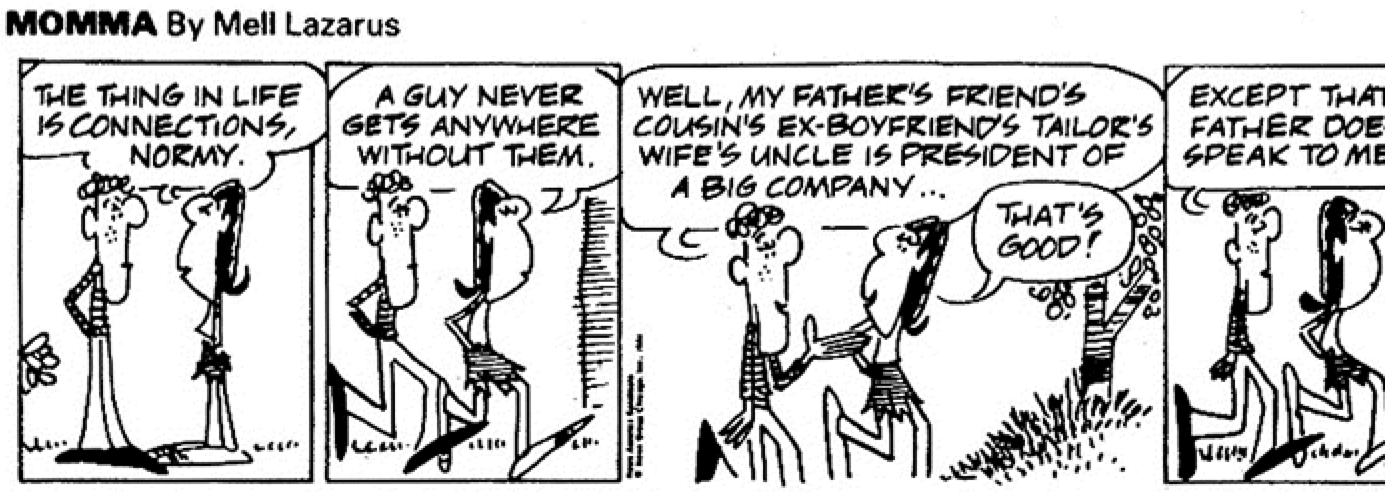

Figure 10.

In Figure 10, he stresses the critical role of a cut edge. In Figure 11 he questions the notion of balance. And finally in Figure 12, a *Dilbert* cartoon, Scott Adams provides insight into what betweenness is all about (Freeman, 1977).

MOMMA By Mell Lazarus

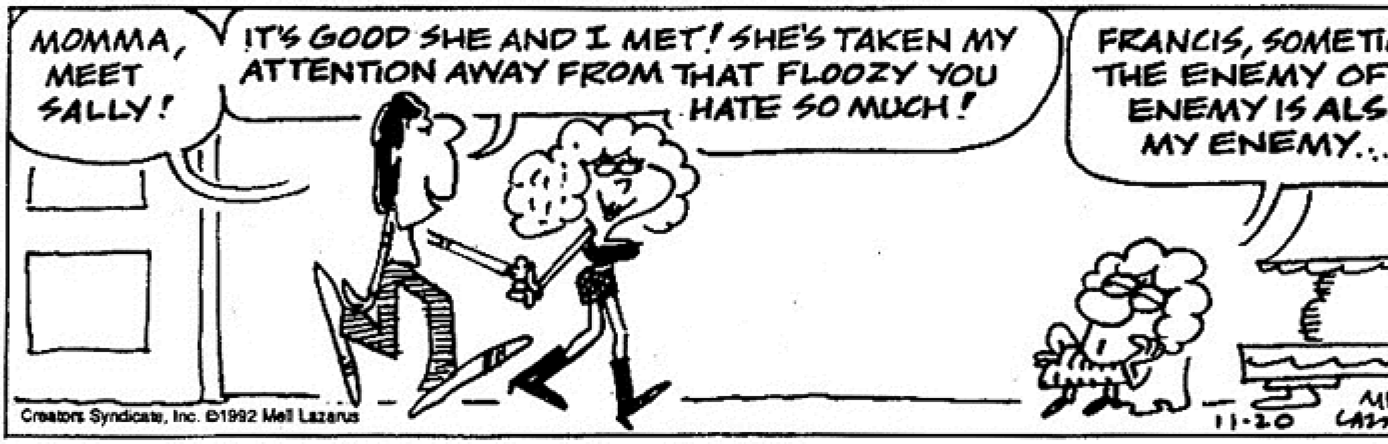

Figure 11.

DILBERT By Scott Adams

Figure 12.

Algebraic ideas are unexpectedly popular with cartoonists. Figure 13 is the cartoon *Boffo*, by Joe Martin. Figure 14 is the comic strip, *Dennis the Menace* by Hank Ketcham.

Figure 14.

Figure 13.

And Figure 15 is *Peanuts* by Charles M. Schultz. Like Lorrain and White (1971), these three cartoonists are concerned with the importance and the difficulty of concatenating relationships.

Figure 15.

The remaining figures all deal with applications of various sorts. Figures 16, 17 and 18 deal with the issue of searching through a network. Figure 16 is yet another *Sally Forth* strip by Greg Howard. It is concerned with the use of social networks to find a job (Granovetter, 1974).

Figure 16.

The dual of that issue, finding a person to fill a position, is covered in Figure 17, a Gary Trudeau *Doonesbury* strip.

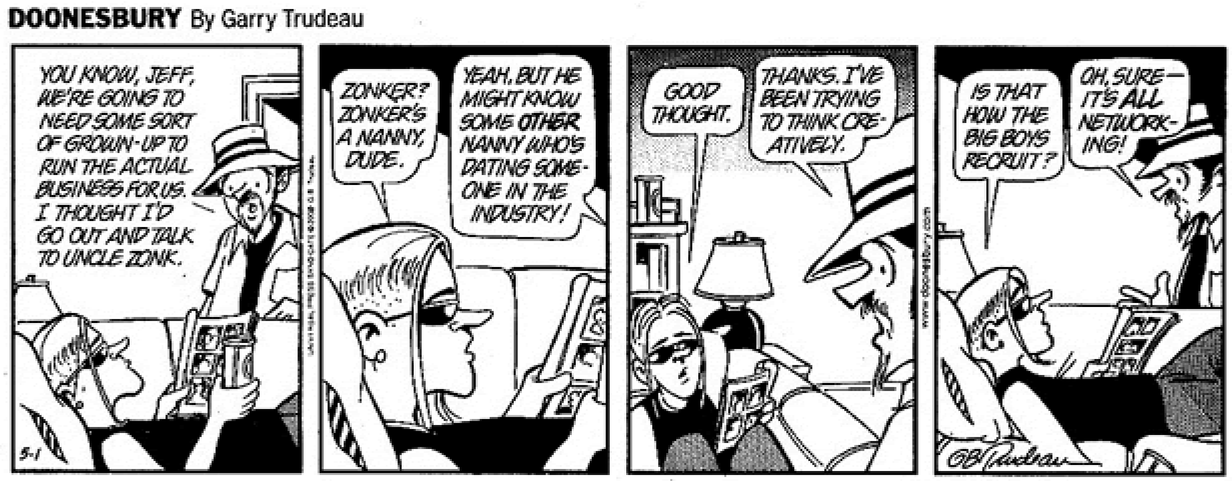

Figure 17.

And another *Cathy* by Cathy Guisewite illustrates the search for a mate.


Cathy
by
Cathy Guisewite
POOF POOF
DAB DAB
PUCKER PUCKER
DO YOU KNOW ANY WOMEN YOU COULD INTRODUCE ME TO WHO MIGHT KNOW MEN THEY COULD INTRODUCE ME TO?
AFTER YOU REJECTED FRED, I INTRODUCED YOU TO CHERYL, WHO INTRODUCED YOU TO BRIAN, WHO YOU ALSO REJECTED.
SORRY.
DO YOU KNOW ANY OTHER WOMEN WHO COULD INTRODUCE ME TO OTHER WOMEN WHO MIGHT KNOW MEN THEY COULD INTRODUCE ME TO??
DIAL DIAL
I'M FINALLY EMOTIONALLY READY TO BE FIXED UP, MARGO! DO YOU KNOW ANY MEN YOU COULD INTRODUCE ME TO??
I ALREADY INTRODUCED YOU TO MY HUSBAND'S BROTHER, AND YOU REJECTED HIM.
SORRY.
AFTER THE CHERYL/BRIAN INCIDENT, I INTRODUCED YOU TO KAREN, WHO INTRODUCED YOU TO PAM, WHO INTRODUCED YOU TO JACK, WHO YOU ALSO REJECTED.
HOW ABOUT COUPLES? DO YOU KNOW ANY COUPLES WHO COULD INTRODUCE ME TO WOMEN WHO COULD INTRODUCE ME TO OTHER WOMEN WHO MIGHT KNOW A MAN THEY COULD INTRODUCE ME TO??
click.
MY LOVE LIFE: ONCE, AT A STANDSTILL. NOW, GOING BACKWARDS.
GUISEWITE
© 2000 CATHY GUISEWITE distributed by Universal Press Syndicate

Figure 18.

Figures 19 and 20 explore the network based diffusion process. Figure 19 is a *Mother Goose and Grimm* strip by Mike Peters. It shows how an individual can benefit by the spread of information.

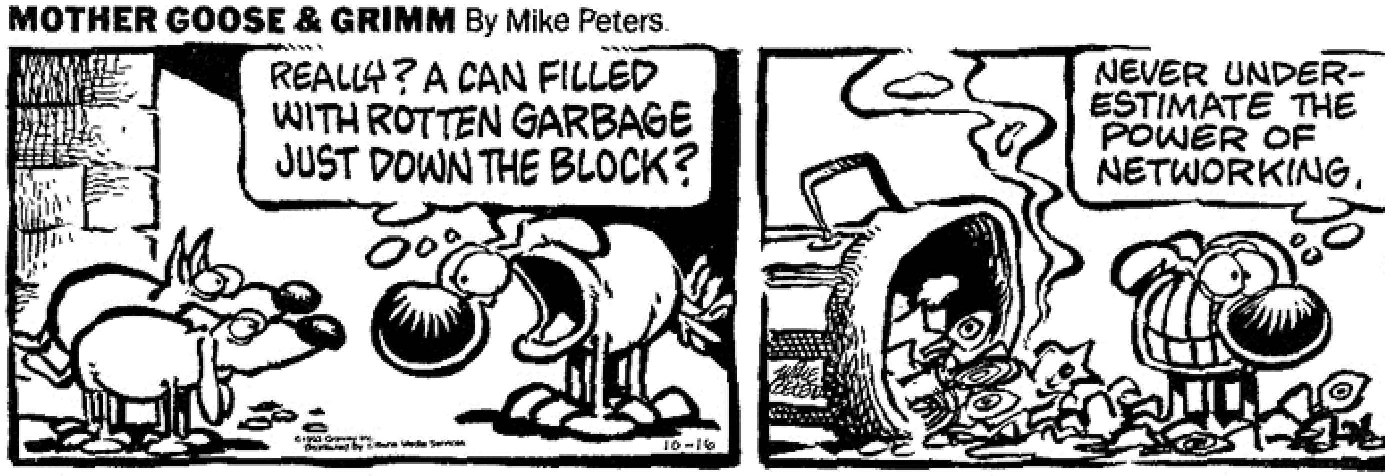

Figure 19.

Figure 20 is a linked pair of Greg Howard's *Sally Forth* strips. They introduce the idea of the speed of a diffusion process in a small organization.

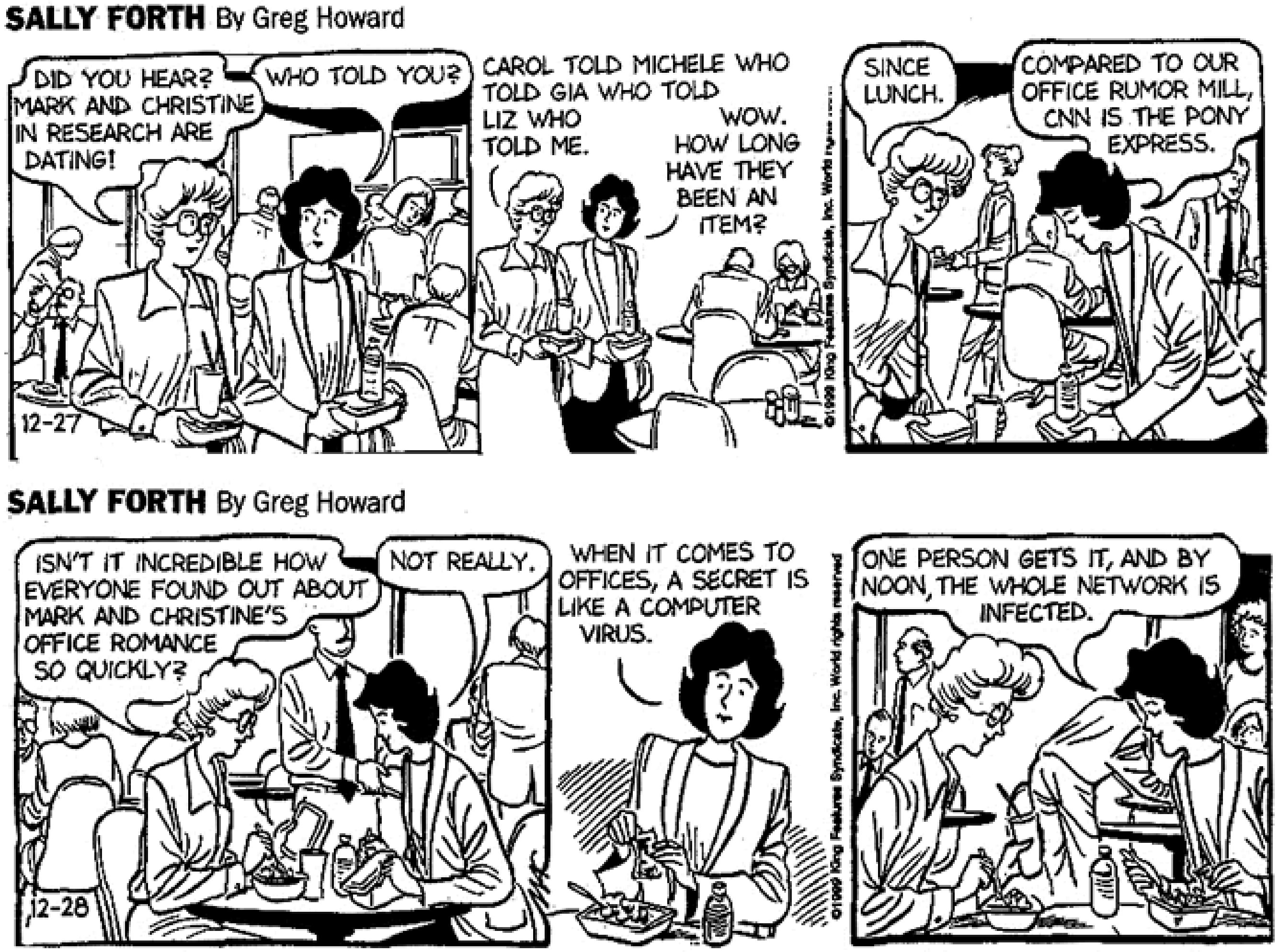

Figure 20.

There are four cartoons that are concerned with organizations. Figures 21, 22 and 23 are all focused on the importance of the "old boy" networks. Figures 21 and 22 are both by Dana Fradon from *The New Yorker*, and Figure 23 is a *Good News - Bad News* cartoon by Henry Martin. Together, the three associate "old boys" with organization, power and privilege.

Figure 21.

"Tell him the old-boy network is here t

Figure 22.

"Miss Wilkins, have some of my close associates in the old-boy network arrange a little surprise party for me."

Figure 23.

Finally, Figure 24 is from Lynn Johnson's *For Better or For Worse* strip. It shows dramatically the implications of Bott's (1957) tight-knit networks. They provide social support but they also mobilize social control.

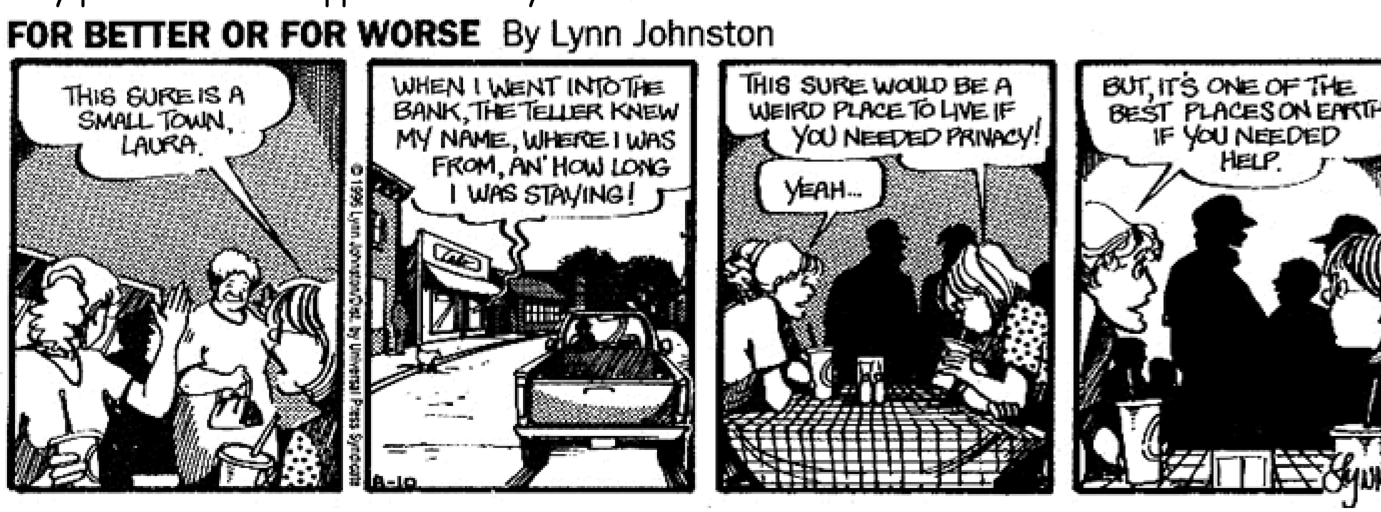

Figure 24.

That, then, is a quick review of some recent cartoons that deal with issues in terms of social networks. They are fun and, hopefully, they can be used to initiate newcomers to the study of social structure. Personally, I hope that the networks field continues to catch the eye of the community of cartoonists.

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	2000	2001	2002
JANUARY			
FEBRUARY			**International Social Networks Conference** 2/13-17: New Orleans
MARCH	**Methodology Section of the American Sociological Association** 3/25-26: Los Angeles		
APRIL	**International Social Networks Conference** 4/13-16: Vancouver	**International Social Networks Conference** 4/25-29 April: Budapest	
MAY		**International Communication Association**	**International Communication Association**
JUNE	**International Communication Association** 6/1-5: Acapulco, Mexico	**Canadian Sociology & Anthropology Association** Montreal	
	Classification Society of North America 6/8-11: Montreal		
JULY	**CASOS Summer Institute Carnegie Mellon University** 7/16-24		
AUGUST	**Academy of Management** 8/4-9: Toronto	**American Sociological Ass'n** 8/18-22 Anaheim	**American Sociological Ass'n** 8/16-20: Chicago
	American Sociological Ass'n 8/11 - 16: Washington, DC		
	Vancouver Symposium on Networks, Needles, Drugs, Risk, Infectious Disease 8/27-30: Vancouver		
SEPTEMBER	**Australian Anthropological Society** 9/21-23: U Western Australia, Perth		
	Congress of the European Association for Behavioural & Cognitive Therapies 9/26-28 Granada, Spain		
OCTOBER	**Great Basin Anthropological Conference** 10/5-7: Ogden, Utah		
NOVEMBER	**American Anthropological Association** 11/15-19: San Francisco	**American Anthropological Association** 11/28 - 12/2: Washington, DC	**American Anthropological Association** 11/20-24: New Orleans
DECEMBER	**International Congress on Intelligent Systems and Applications** 12/12-15: Sydney, Australia		

Announcements

MEETINGS

International Cultural Research Network Congress

EXPLORING CULTURAL PERSPECTIVES
June 28-July 3, 2000
Xi'an, China

Contact: ShirleyAnn Goski
International Cultural Research Network
7-104 Education N
U of Alberta
Edmonton, Alberta
Canada
sgoski@edc.gov.ab.ca

CASOS Summer Institute
Center for Computational Analysis of Social and Organizational Systems Annual Summer Workshop

July 16-24
Carnegie Mellon University

Director: Kathleen M. Carley

Workshop -- July 16-21, 2000

Key Note Dinner -- July 21, 2000

Conference -- July 21-24, 2000

Purpose
The purpose of this institute is to provide an intense and hands-on introduction to computational analysis of social and organizational systems. Formal techniques taught include social network analysis and simulation. Participants will also be able to complete the workshop without programming skills or in-depth understanding of particular social theories. Computer programming and basic social or organizational theory are not included under the topics covered.

Participants learn about current trends, practices, and tools available for computational social science and organization theory. Techniques for designing, analyzing, and validating computational models these models are presented. There is also an emphasis on appropriate and inappropriate ways to critique computational models and network analyses. The strengths and weaknesses of computational and network approaches to the social and organizational sciences are discussed. Multiple computational platforms are explored, including VDT, ORGAHEAD, CONSTRUCT and ORGCON. The network representation and theory underlying VDT, ORGAHEAD, and CONSTRUCT is presented. Basic network representations, statistics, and network analysis techniques including structure and QAP are covered. The curriculum also contains standardized representation schemes for tasks, agents and optimization techniques. An examination of social network methods, complexity theory and procedures for integrating network-based metrics and statistics into computational models completes the program.

Workshop Curriculum
The curriculum builds on both social network and computational analysis techniques, and illustrates how to use these techniques to study social, organizational and policy issues. Topics covered include:

- Social Networks
- Organizational Networks
- Dynamic Networks
- Optimization Techniques
- Adaptive, Evolutionary, and Learning Systems
- Emulative models; The Virtual Design Team
- Intellective models and statistical analysis
- Validation Analysis
- Docking: The Virtual Design Team & ORGCON

Workshop Participants
Participation is open to graduate students, faculty, and personnel from industry. Due to space restrictions we are limited to approximately 35 students per year.

Conference
Workshop participants are invited to also attend the annual the CASOS conference. The conference is on July 21-24. This years keynote address will be given by Herb Simon. Conference participants are drawn internationally from researchers in the areas of computational social science and computational and mathematical organization theory.

Faculty
Faculty are drawn from various institutions throughout the U.S. Faculty include: Rich Burton, Kathleen M. Carley, Tsuhan Chen, Michael Cohen, David Krackhardt, Ray Levitt, Bill, Mcevily, Ray Reagans.

Additional Information
For additional information contact Kathleen M. Carley, kcarley@ece.cmu.edu, 1-412-268-3225. Also see the CASOS web page:
http://www.ices.cmu. edu/casos

Academy of Management

August 4-9
Toronto, Ontario Canada
http://www.aom.pace.edu/meetings/2000/

The theme for the 2000 Academy of Management Meetings is "A New Time."

Negative Relationships in Social Networks in the Workplace Symposium, jointly sponsored by the Organizational Behavior, Organization Theory & Management, and Conflict Management divisions.

http://WaltonCollege.uark.edu/NegativeTies/

August 9, 8:30-10:20 in the Royal York's Alberta Main mezzanine.

Calls for papers:

- ***Academy of Management Executive*** Special Issue: "A New Time"
  (papers due July 1, 2000)
  http://www.aom.pace.edu/meetings/2000/AMEcall.htm
- ***Academy of Management Journal*** Special Issue: “A New Time”
  (papers due October 1, 2000)
  http://www.aom.pace.edu/amj/Call_A_new_time.html
- ***Academy of Management Review*** Special Issue: “A New Time”
  papers due September 1, 2000)
  http://www.aom.pace.edu/meetings/2000/AMRcall.htm

Social Networks Research Workshop
Co-sponsored by the International Management and Research Methods Divisions
Academy of Management Annual Meeting
Saturday, August 5, 2000, 8:00 am - 5:00 pm
Sheraton Centre, York (Mezzanine); Toronto

Organizers:

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College of Business Administration
Northeastern University
Boston, MA 02115
(617) 373-5759, (617) 373-8628 fax

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krack@cmu.edu

This will be the 4th consecutive year that this Professional Development Workshop on Social Networks has been offered during the Academy of Management annual meeting. Prior versions of this workshop have had robust participation in Boston (1997), San Diego (1998), and Chicago (1999). Over 125 AOM members have participated to date. This year's program has been improved to take into consideration feedback from past participants.

Program Goals
To introduce members of the Academy of Management to social networks theory and analysis. More specifically to:

- Introduce social networks concepts and methodology
- Discuss social networks methods and their use in management research
- Discuss social networks methods applications to international management research
- To stimulate discussion among participants with introductory or more advanced backgrounds in the area

Social Networks is a field of study that focuses on social relations among a set of actors. In the process of working in this field, researchers have developed a set of distinctive theoretical perspectives sympathetic with systems theory and complexity theory. Management research and its international dimensions are increasingly studied through the use of social networks concepts. Social networks are also characterized by a distinctive methodology encompassing techniques for collecting data, statistical analysis, and visual representation. Some of the hallmarks of social networks perspectives are:

- focus on relationships between actors rather than attributes of actors
- sense of interdependence: a molecular rather atomistic view
- structure and its effects on substantive outcomes
- emergent effects

Program	
08:00 am - 08:30 am	Light breakfast - registration (Nick Athanassiou)
08:30 am - 10:00 am	Introduction to Social Networks. Review of theory and

	research methodologies. Techniques will be illustrated using a PC and real network data. (Steve Borgatti, David Krackhardt)
10:00 am - 10:15 am	Break
10:15 am - 11:45 am	Introduction to Social Networks (continued) - (Steve Borgatti, David Krackhardt)
11:45 am - 1:00 pm	Lunch Break
1:00 pm - 2:45 pm	UCINET software use for the analysis of network data. Participants are urged to bring laptop computers. UCINET -- network analysis -- and Krackplot -- network plotting -- software will be distributed on CD-ROM along with sample social network research files. (Steve Borgatti, David Krackhardt)
2:45 pm - 3:00 pm	Break
3:00 pm - 4:30 pm	Open discussion on social networks research with focus on intra-organizational and international management network topics (Daniel Brass and Nick Athanassiou).
4:30 pm - 5:00 pm	Wrap-up

For information write to Nick Athanassiou at: nickath@neu.edu

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American Sociological Association

August 11 - 16, 2000
Washington, DC
http://www.asanet.org/public/ammedia.html

The opening plenary session on "Sexism and Feminism: Challenges for the 21st Century" will focus on gender issues and their implications in both the U.S. and abroad. The theme of this Annual Meeting is "Oppression, Domination, and Liberation: Challenges for the 21st Century." In addition to thematic sessions, the meeting will feature presentations, book panels, poster sessions, symposia, and other events focused on a variety of research and policy-related perspectives.

Pre-Meeting Didactic Seminar. Social Network Analysis (co-sponsored by the ICPSR and the ASA Section on Methodology)—Marriott Wardman Park Friday, August 11, 9:00 a.m.-4:00 p.m. Ticket required for admission Leaders: Stanley Wasserman, Katherine Faust.

Vancouver Symposium on Networks, Needles, Drugs, Risk, Infectious Disease

August 27-30, 2000
Vancouver, BC Canada
Organizer: Bill Richards richards@sfu.ca
http://www.sfu.ca/~insna/index2.html

Meetings will start Sunday the 27th over an informal breakfast discussion and end on Wednesday the 30th, after a dinner wrap-up discussion. This is not a formal conference at which participants present papers to a large audience; it is more of a "think-tank" with informal presentations and time for discussions of ideas, methods, problems, etc. Some issues that will be on the table are:

- What do we know about the determinants of social networks of drug users?
- What is the nature of these networks -- what are their structural properties? (centralization, size of connected components, stability, position of infected and uninfected members and regions, etc.)
- How are these networks different from ordinary social networks?
- What effects do disturbances (interventions, urban development, policing patterns, etc.) have on these networks and what are the implications for the dynamics of the epidemiology?
- What research questions can be answered with network data and methods?
- What are the best ways to get accurate and valid data on use of drugs while respecting the individuals involved?

The main goals are to exchange information and experience, to foster collaboration, to determine which research strategies might be especially likely to lead to useful advances, and to establish informal and research linkages that may lead to further opportunities.

Australian Anthropological Society

September 21-23, 2000
University of Western Australia, Perth

The 26th Annual conference of the Australian Anthropological Society will be hosted by the University of Western Australia, Perth from 21-23 September.

Preceding the conference will be a 2 day Native Title workshop entitled Crossing Boundaries: Anthropology, Linguistics, History and Law in Native Title held on 19 and 20 September.

Keynote Speakers

Professor Dame Anne Salmond, Professor of Social Anthropology and Maori Studies, University of Auckland. Professor Salmond will deliver a keynote address exploring the cross-cultural dynamics of Captain Cook's three Pacific voyages. (Title to be announced.)

Dr Peter Sutton. The inaugural Professor Ronald M & Dr Catherine H Berndt Research Foundation Biennial Lecture will be delivered as a key note address at the conference. The address will be delivered by Dr Peter Sutton, an eminent anthropologist who has carried out ground breaking research for many years in Australian Aboriginal Studies. Peter Sutton is an independent scholar and consultant. His academic background is mainly in linguistics and anthropology. He has worked with Aboriginal people in remote areas of Cape York Peninsula and the Northern Territory, but also in urban and rural centres in north Queensland, South Australia, New South Wales and Tasmania, since 1969. He has assisted in various capacities on over fifty land claim cases in the Northern Territory, Queensland, New South Wales, Western Australia and South Australia since 1979. He is an author or editor of ten books and has written about a hundred academic and other papers, mainly in the fields of Aboriginal land tenure, linguistic anthropology, art, and policy. His books include Dreamings: The Art of Aboriginal Australia (ed., 1988), Wik-Ngathan Dictionary (1995), Country: Aboriginal Boundaries and Land Ownership in Australia (1995), and Native Title and the Descent of Rights (1998).

Lecture title: Ethnography, History, and the Idea of Classical Indigenous Australian cultures.

Ronald and Catherine Berndt's unique ethnographic contribution to the world's knowledge of Aboriginal societies was conceived very much within the synchronic framework of mid-twentieth century anthropology, in spite of their strong attention to history. As time goes by, their ethnographies, like so many others, become redefined principally as records of the past cultures and social frameworks of the groups with whom they worked. Traditional ethnographies like theirs turn rapidly into a limited corpus where further factual research, beyond the revisiting of raw materials such as field notes and archives, is no longer possible, as the people concerned are all deceased and, more likely than not, times have changed. Ethnographies such as the Berndts' may be considered the Classics of a continent where written records began only in recent centuries, but where the human past is very long. The artificial fixity of the past, in this sense of a corpus, becomes something of a finite well from which present and future cultural life will keep drawing as it continually recreates itself, reinterprets the record, and, in the case of many Indigenous people, inserts aspects of the recorded past into contemporary cultural practice. The classical past is playing a vital role in current and future research, not only in the 'heritage' industry and native title claims, but also in academic studies of Indigenous Australia where the disciplines of anthropology, linguistics, archaeology and human biology intermesh. Changes in ethnographic practice, in relations between anthropologists and those they study, and in current theoretical concerns, do not remove the need for interdisciplinary skills and interests of the kind possessed by scholars such as Ronald and Catherine Berndt.

www.arts.uwa.edu.au/anthrop
www/aas2000/welcome.htm

The Congress of the European Association for Behavioural & Cognitive Therapies

September 26-28 of 2000
Granada, Spain

Contact: Juan Carlos Sierra
President, Scientific Committee of the EABCT-2000
Congress Secretariat: EABCT-2000
Apartado de Correos 3.061
18080 Granada
http://www.aepc.ieanet.com

International Society for Luso-hispanic Humor Studies

September 28-30, 2000
Montreal, Canada

Contact: K M Sibbald
Dept of Hispanic Studies
McGill U
680 Sherbrooke St W, Rm 385
Montreal, Quebec H3A 2M7
Canada
tel 514/398-6683
fax 514/398-3406
ksibbald@leacock.lan.mcgill.ca

Pre-Columbian Society of Washington, DC: Are We Having Fun Yet? Pleasurable Activities in Ancient America

September 16, 2000

Contact: PCSWDC
11104 Bucknell Dr.
Silver Spring, MD 20902
USA

fax 301/942-5531
leisure@ancientamerica.net

Fifth International Rock Art Symposium

September 18-24, 2000
Tarija, Bolivia

Contact: Matthias Strecker
SIARB
Casilla 3091
La Paz, Bolivia
tel/fax 591-2-711809
laranibar@mail.megalink.com

Great Basin Anthropological Conference

October 5-7, 2000
Ogden, Utah

Contact: Steven Simms
Utah State U
ssimms@hass.usu.edu
www.hass.usu.edu/~gbac 2000

American Anthropological Association

November 15-19, 2000
San Francisco, California

Program Chairs: Louise Lamphere, President, and Heléna Ragoné

Theme: "The Public Face of Anthropology in the Millennium."

For more information go to:
http://www.aaanet.org/mtgs/mtgs.htm

or contact:
American Anthropological Association
4350 North Fairfax Drive, Suite 640

Arlington, VA 22203-1621
(703) 528-1902 ext 3025

Sessions of interest to social networkers:

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

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

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

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

International Congress on Intelligent Systems and Applications (ISA'2000)

December 12-15, 2000
University of Wollongong
Sydney, Australia

The ISA'2000 Congress aims to provide researchers and practitioners from academia and industry with a forum to report on the latest developments in intelligent systems and their applications within the four major areas of computational intelligence, interactive and collaborative computing, industrial systems, and biologically inspired systems. The Congress will also provide a unique opportunity for dialogue and synergy between scientists and engineers from different backgrounds with the common interest in intelligent systems.

The congress consists of the following four Symposia:

1. **Computational intelligence (CI'2000)**
   for details see http://www.icsc.ab.ca/151-info.htm
2. **Interactive and collaborative computing (ICC'2000)**
   for details see http://www.icsc.ab.ca/152-info.htm
3. **Industrial systems (IS'2000)**
   for details see http://www.icsc.ab.ca/153-info.htm

4. **Biologically inspired systems (BIS'2000)**
   for details see http://www.icsc.ab.ca/154-info.htm

Scientific program
ISA'2000 will include invited plenary talks, contributed sessions, invited sessions, workshops and tutorials.

Call for invited sessions
The organization of invited sessions is encouraged. Prospective organizers are requested to send a session proposal (consisting of 4-5 invited papers, the recommended session-chair and co-chair, as well as a short statement describing the title and the purpose of the session) to the respective symposium chair or the congress organizer. Invited sessions should preferably start with a tutorial paper. The registration fee of the session organizer will be waived, if at least 4 authors of invited papers register to the conference.

Poster Presentations
Poster presentations are encouraged for people who wish to receive peer feedback, and practical examples of applied research are particularly welcome. Poster sessions will allow the presentation and discussion of respective papers, which will also be included in the conference proceedings.

Proceedings and Publications
All accepted and invited papers will be included in the congress proceedings. Selected papers will also be included in special issues of some prestigious journals.

Important Dates

- March 31, 2000: Submission deadline
- May 31, 2000: Notification of acceptance
- July 30, 2000: Delivery of full papers
- December 12-15, 2000: ISA'2000 congress

Congress General Chair
Prof. Fazel Naghdy
University of Wollongong
Electrical & Computer Engineering Department
Northfields Avenue
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Email: f.naghdy@uow.edu.au

Congress Organizer
ICSC International Computer Science Conventions
P.O. Box 279
Millet, AB T0C 1Z0 / Canada
Fax: +1-780-387-4329
Phone: +1-780-387-3546

Email Operating Division: operating@icsc.ab.ca
Email Planning Division: planning@icsc.ab.ca

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- University of Wollongong
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- IEAust, The Institution of Engineers, Australia
- Nortel Networks
- Corporate Research Centre for Intelligent Manufacturing Systems and Technologies Ltd.
- ICSC International Computer Science Conventions, Canada / Switzerland

Announcements

MEETINGS

International Cultural Research Network Congress
EXPLORING CULTURAL PERSPECTIVES
June 28-July 3, 2000
Xi'an, China

Contact ShirleyAnn Goski, International Cultural Research Network, 7-104 Education N, U of Alberta, Edmonton, Alberta, Canada; sgoski@edc.gov.ab.ca

CASOS Summer Institute

Center for Computational Analysis of Social and Organizational Systems Annual Summer Workshop

Carnegie Mellon University
Director: Kathleen M. Carley

Workshop -- July 16-21, 2000
Key Note Dinner -- July 21, 2000
Conference -- July 21-24, 2000

Purpose:
The purpose of this institute is to provide an intense and hands-on introduction to computational analysis of social and organizational systems. Formal techniques taught include social network analysis and simulation. Participants will also be able to complete the workshop without programming skills or in-depth understanding of particular social theories. Computer programming and basic social or organizational theory are not included under the topics covered.

Participants learn about current trends, practices, and tools available for computational social science and organization theory. Techniques for designing, analyzing, and validating computational models these models are presented. There is also an emphasis on appropriate and inappropriate ways to critique computational models and network analyses. The strengths and weaknesses of computational and network approaches to the social and organizational sciences are discussed. Multiple computational platforms are explored, including VDT, ORGAHEAD, CONSTRUCT and ORGCON. The network representation and theory underlying VDT, ORGAHEAD, and CONSTRUCT is presented. Basic network representations, statistics, and network analysis techniques including structure and QAP are covered. The curriculum also contains standardized representation schemes for tasks, agents and optimization techniques. An examination of social network methods, complexity theory and procedures for integrating network-based metrics and statistics into computational models completes the program.

Workshop Curriculum:
The curriculum builds on both social network and computational analysis techniques, and illustrates how to use these techniques to study social, organizational and policy issues. Topics covered include:

- Social Networks
- Organizational Networks
- Dynamic Networks
- Optimization Techniques
- Adaptive, Evolutionary, and Learning Systems
- Emulative models; The Virtual Design Team
- Intellective models and statistical analysis
- Validation Analysis
- Docking: The Virtual Design Team & ORGCON

Workshop Participants:
Participation is open to graduate students, faculty, and personnel from industry. Due to space restrictions we are limited to approximately 35 students per year.

Conference:
Workshop participants are invited to also attend the annual the CASOS conference. The conference is on July 21-24. This years keynote address will be given by Herb Simon. Conference participants are drawn internationally from researchers in the areas of computational social science and computational and mathematical organization theory.

Faculty:
Faculty are drawn from various institutions throughout the U.S. Faculty include: Rich Burton, Kathleen M. Carley, Tsuhan Chen, Michael Cohen, David Krackhardt, Ray Levitt, Bill, Mcevily, Ray Reagans.

Additional Information:
For additional information contact Kathleen M. Carley, kcarley@ece.cmu.edu, 1-412-268-3225. Also see the CASOS web page:
http://www.ices.cmu. edu/casos

Academy of Management

August 4-9
Toronto, Ontario Canada
http://www.aom.pace.edu/meetings/2000/

The theme for the 2000 Academy of Management Meetings is "A New Time."

Negative Relationships in Social Networks in the Workplace Symposium, jointly sponsored by the Organizational Behavior, Organization Theory & Management, and Conflict Management divisions.

http://WaltonCollege.uark.edu/NegativeTies/

August 9, 8:30-10:20 in the Royal York's Alberta Main mezzanine.

Calls for papers:

- ***Academy of Management Executive*** Special Issue: "A New Time" (papers due July 1, 2000) http://www.aom.pace.edu/meetings/2000/AMEcall.htm
- ***Academy of Management Journal*** Special Issue: “A New Time” (papers due October 1, 2000) http://www.aom.pace.edu/amj/Call_A_new_time.html
- ***Academy of Management Review*** Special Issue: “A New Time” (papers due September 1, 2000) http://www.aom.pace.edu/meetings/2000/AMRcall.htm

Social Networks Research Workshop

Co-sponsored by the International Management and Research Methods Divisions Academy of Management Annual Meeting

Saturday, August 5, 2000, 8:00 am - 5:00 pm
Sheraton Centre, York (Mezzanine); Toronto

Organizers:

Nicholas Athanassiou
313 Hayden Hall
College of Business Administration
Northeastern University
Boston, MA 02115
(617) 373-5759, (617) 373-8628 fax
nickath@neu.edu

Stephen P. Borgatti
Carroll School of Management
Boston College
Boston, MA 02467
978 456-7356 (v), 978 456-7373 (fax)
borgatts@bc.edu

Daniel Brass
Pennsylvania State University
University Park, PA 16802

(814) 865-1522, (814) 863-7261
dbrass@psu.edu

David Krackhardt
Carnegie Mellon University
Pittsburgh, PA
(412) 268-4758, (412) 268-7902 fax
krack@cmu.edu

This will be the 4th consecutive year that this Professional Development Workshop on Social Networks has been offered during the Academy of Management annual meeting. Prior versions of this workshop have had robust participation in Boston (1997), San Diego (1998), and Chicago (1999). Over 125 AOM members have participated to date. This year's program has been improved to take into consideration feedback from past participants.

Program Goals:

To introduce members of the Academy of Management to social networks theory and analysis. More specifically to:

- Introduce social networks concepts and methodology
- Discuss social networks methods and their use in management research
- Discuss social networks methods applications to international management research

- To stimulate discussion among participants with introductory or more advanced backgrounds in the area

Social Networks is a field of study that focuses on social relations among a set of actors. In the process of working in this field, researchers have developed a set of distinctive theoretical perspectives sympathetic with systems theory and complexity theory. Management research and its international dimensions are increasingly studied through the use of social networks concepts. Social networks are also characterized by a distinctive methodology encompassing techniques for collecting data, statistical analysis, and visual representation. Some of the hallmarks of social networks perspectives are:

- focus on relationships between actors rather than attributes of actors
- sense of interdependence: a molecular rather atomistic view
- structure and its effects on substantive outcomes
- emergent effects

Program:

08:00 am - 08:30 am Light breakfast - registration (Nick Athanassiou)

08:30 am - 10:00 am Introduction to Social Networks. Review of theory and research methodologies. Techniques will be illustrated using a PC and real network data. (Steve Borgatti, David Krackhardt)

10:00 am - 10:15 am Break

10:15 am - 11:45 am Introduction to Social Networks (continued) - (Steve Borgatti, David Krackhardt)

11:45 am - 1:00 pm Lunch Break

1:00 pm - 2:45 pm UCINET software use for the analysis of network data. Participants are urged to bring laptop computers. UCINET -- network analysis -- and Krackplot -- network plotting -- software will be distributed on CD-ROM along with sample social network research files. (Steve Borgatti, David Krackhardt)

2:45 pm - 3:00 pm Break

3:00 pm - 4:30 pm Open discussion on social networks research with focus on intra-organizational and international management network topics (Daniel Brass and Nick Athanassiou).

4:30 pm - 5:00 pm Wrap-up

For information write to Nick Athanassiou at:
nickath@neu.edu

American Sociological Association

August 11 - 16, 2000
Washington, DC
http://www.asanet.org/public/ammedia.html

The opening plenary session on "Sexism and Feminism: Challenges for the 21st Century" will focus on gender issues and their implications in both the U.S. and abroad. The theme of this Annual Meeting is "Oppression, Domination, and Liberation: Challenges for the 21st Century." In addition to thematic sessions, the meeting will feature presentations, book panels, poster sessions, symposia, and other events focused on a variety of research and policy-related perspectives.

Pre-Meeting Didactic Seminar. Social Network Analysis (co-sponsored by the ICPSR and the ASA Section on Methodology)—Marriott Wardman Park Friday, August 11, 9:00 a.m.-4:00 p.m. Ticket required for admission Leaders: Stanley Wasserman, Katherine Faust.

Vancouver Symposium on Networks, Needles, Drugs, Risk, Infectious Disease

August 27-30, 2000
Vancouver, BC Canada
Organizer: Bill Richards richards@sfu.ca
http://www.sfu.ca/~insna/index2.html

Meetings will start Sunday the 27th over an informal breakfast discussion and end on Wednesday the 30th, after a dinner wrap-up discussion. This is not a formal conference at which participants present papers to a large audience; it is more of a "think-tank" with informal presentations and time for discussions of ideas, methods, problems, etc. Some issues that will be on the table are:

- What do we know about the determinants of social networks of drug users?
- What is the nature of these networks -- what are their structural properties? (centralization, size of connected components, stability, position of infected and uninfected members and regions, etc.)
- How are these networks different from ordinary social networks?
- What effects do disturbances (interventions, urban development, policing patterns, etc.) have on these networks and what are the implications for the dynamics of the epidemiology?
- What research questions can be answered with network data and methods?
- What are the best ways to get accurate and valid data on use of drugs while respecting the individuals involved?

The main goals are to exchange information and experience, to foster collaboration, to determine which research strategies might be especially likely to lead to useful advances, and to establish informal and research linkages that may lead to further opportunities.

Australian Anthropological Society

September 21-23, 2000
University of Western Australia, Perth

The 26th Annual conference of the Australian Anthropological Society will be hosted by the University of Western Australia, Perth from 21-23 September.

Preceding the conference will be a 2 day Native Title workshop entitled Crossing Boundaries: Anthropology, Linguistics, History and Law in Native Title held on 19 and 20 September.

Keynote Speakers

Professor Dame Anne Salmond, Professor of Social Anthropology and Maori Studies, University of Auckland. Professor Salmond will deliver a keynote address exploring the cross-cultural dynamics of Captain Cook's three Pacific voyages. (Title to be announced.)

Dr Peter Sutton. The inaugural Professor Ronald M & Dr Catherine H Berndt Research Foundation Biennial Lecture will be delivered as a key note address at the conference. The address will be delivered by Dr Peter Sutton, an eminent anthropologist who has carried out ground breaking research for many years in Australian Aboriginal Studies. Peter Sutton is an independent scholar and consultant. His academic background is mainly in linguistics and anthropology. He has worked with Aboriginal people in remote areas of Cape York Peninsula and the Northern Territory, but also in urban and rural centres in north Queensland, South Australia, New South Wales and Tasmania, since 1969. He has assisted in various capacities on over fifty land claim cases in the Northern Territory, Queensland, New South Wales, Western Australia and South Australia since 1979. He is an author or editor of ten books and has written about a hundred academic and other papers, mainly in the fields of Aboriginal land tenure, linguistic anthropology, art, and policy. His books include Dreamings: The Art of Aboriginal Australia (ed., 1988), Wik-Ngathan Dictionary (1995), Country: Aboriginal Boundaries and Land Ownership in Australia (1995), and Native Title and the Descent of Rights (1998).

Lecture title: Ethnography, History, and the Idea of Classical Indigenous Australian cultures. Ronald and Catherine Berndt's unique ethnographic contribution to the world's knowledge of Aboriginal societies was conceived very much within the synchronic framework of mid-twentieth century anthropology, in spite of their strong attention to history. As time goes by, their ethnographies, like so many others, become redefined principally as records of the past cultures and social frameworks of the groups with whom they worked. Traditional ethnographies like theirs turn rapidly into a limited corpus where further factual research, beyond the revisiting of raw materials such as field notes and archives, is no longer possible, as the people concerned are all deceased and, more likely than not, times have changed. Ethnographies such as the Berndts' may be considered the Classics of a continent where written records began only in recent centuries, but where the human past is very long. The artificial fixity of the past, in this sense of a corpus, becomes something of a finite well from which present and future cultural life will keep drawing as it continually recreates itself, reinterprets the record, and, in the case of many Indigenous people, inserts aspects of the recorded past into contemporary cultural practice. The classical past is playing a vital role in current and future research, not only in the 'heritage' industry and native title claims, but also in academic studies of Indigenous Australia where the disciplines of anthropology, linguistics, archaeology and human biology intermesh. Changes in ethnographic practice, in relations between anthropologists and those they study, and in current theoretical concerns, do not remove the need for interdisciplinary skills and interests of the kind possessed by scholars such as Ronald and Catherine Berndt.

www.arts.uwa.edu.au/anthropwww/aas2000/ welcome.htm

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President, Scientific Committee of the EABCT-2000
Congress Secretariat: EABCT-2000
Apartado de Correos 3.061
18080 Granada
http://www.aepc.ieanet.com

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Contact: K M Sibbald, Dept of Hispanic Studies, McGill U, 680 Sherbrooke St W, Rm 385, Montreal, Quebec H3A 2M7, Canada; tel 514/398-6683, fax 514/398-3406, ksibbald@leacock.lan.mcgill.ca

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September 16 , 2000

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leisure@ancientamerica.net

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laranibar@mail.megalink.com

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Theme: "The Public Face of Anthropology in the Millennium."

For more information go to:

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or contact:

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

Sessions of interest to social networkers:

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

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

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

Quantitative Methodology**.** Trond Peterson. Haas School of Business, University of California, Berkeley CA 94720, (510) 642-6423.
Email: trond@haas.berkeley.edu

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   for details see http://www.icsc.ab.ca/153-info.htm
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Scientific program
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Call for invited sessions
The organization of invited sessions is encouraged. Prospective organizers are requested to send a session proposal (consisting of 4-5 invited papers, the recommended session-chair and co-chair, as well as a short statement describing the title and the purpose of the session) to the respective symposium chair or the congress organizer. Invited sessions should preferably start with a tutorial paper. The registration fee of the session organizer will be waived, if at least 4 authors of invited papers register to the conference.

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Proceedings and Publications
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May 31, 2000: Notification of acceptance

July 30, 2000: Delivery of full papers
December 12-15, 2000: ISA'2000 congress

Congress General Chair
Prof. Fazel Naghdy
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Phone: +1-780-387-3546
Email Operating Division: operating@icsc.ab.ca

Email Planning Division: planning@icsc.ab.ca

Sponsors

- University of Wollongong
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- IEAust, The Institution of Engineers, Australia
- Nortel Networks
- Corporate Research Centre for Intelligent Manufacturing Systems and Technologies Ltd.
- ICSC International Computer Science Conventions, Canada / Switzerland

1999 Creation and Returns of Social Capital: Social networks in education and labor markets

Department of Economics, University of Amsterdam
December 9-11, 1999

The work-conference took place in the context of the research program “Creation and returns of social capital: Social networks in education and labor markets” (SCALE). The program was initiated by Henk Flap (University of Utrecht), Tom Snijders (University of Groningen) and Frans van Winden (University of Amsterdam) and funded by The Netherlands' Organization for Scientific Research NWO.

To date, research on social capital has been characterized by an ad hoc nature of the theoretical assumptions and measuring instruments used. The underlying aim of the conference is to contribute to a theoretical integration as well as standardization and coordination of empirical research on the significance of social capital.

International experts in the field of research on social capital present the 'state of the art' concerning the development of theories, measuring instruments and empirical research. Attention has been paid to achieve a balance among the speakers in their expertise regarding, on the one side, the development of theories, methods and empirical research (experimental as well as survey research), and, on the other side, their disciplinary background (economics, sociology and statistics). Further, first results of the four research projects that are included in the research program will be presented and discussed for the first time. The projects deal with experimental research on investment in social relationships, studies of social capital in school and at work, and measurement issues as well, while employing a large-scale data collection ('Survey on the Social Networks of the Dutch', SSND).

Organization

The conference was organized by the SCALE research group at CREED/University of Amsterdam, ICS/University of Groningen, and ICS/Utrecht University.

Sponsors: CREED, ICS (Groningen and Utrecht), KNAW, NWO, and Tinbergen Institute.

The Strength of Weak Ties:
a Simulation Study of Network Evolution

Phil Bonacich
University of California Los Angeles

It has often been pointed out (Vanberg & Congleton 1992; Orbell & Dawes 1993; Kitcher 1993; Majiski et al 1997) that the pessimistic inferences about the fate of cooperation in the Prisoners' Dilemma game may be unwarranted. Unlike the case in prisons, actors can often choose whether or not to interact based on the cooperative histories of their potential partners. The ability to avoid any interaction with likely non-cooperators can give cooperative strategies an evolutionary advantage. Similarly, I will argue, the scope condition ordinarily assumed in network exchange research – that the exchange network is unchanging – magnifies the degree of inequality present in exchange networks. There are many situations in which dissatisfied and exploited actors can change their positions. As we shall see, the possibility of changing positions may (or may not) reduce the inequality generated by exchange networks. This means that the validity of theories designed to predict power in networks are often inapplicable; the outcome is often not, as the theories predict, growing inequality, but rather network change maintaining a high level of equality. In addition to pointing out the limitations of existing theories of network power, this paper also has a more positive goal. I attempt to describe the stable forms toward which exchange networks evolve and how this evolution depends on the initial form of the exchange network.

The Constitution of Social Capital in the Transition Phase from School to Labor Market in France

Alain Degenne

Universite de Caen, France

I would like to base my purpose on examples concerning the professional transition from the young people in France to highlight the interest of a concept of social capital. I will thus not seek to give a general definition of the social capital but I adopt the point of view of Sandefur and Lauman who think that one can give a useful definition of the social capital only with reference to one result which one seeks to explain. Various researches which we have made for five years show that the transition is a process which proceeds according to rhythms which vary with the people. We chose to retain a typology of trajectories as significant variable of the transition. In France the young people entering the labor market know a phase of very great instability with recruitment only but for jobs of short duration. This phase lasts approximately two years and step by step the majority obtains a stable employment. My interpretation is that young people were subjected to a phase of socialization at the labor market, phase during which they learn the rules and the language which enables them to be "recognized" and accepted in the professional environment they integrate. Then, they seem to be able to assert at the same time a status and wages. This first period is also a testing period and a selection. In this precise case, I associate the social capital with what is acquired in this phase: a knowledge of the rules of the professional environment, practices of behavior at work, a set of personal relations which make that the recruiting is the result of a whole process and not a specific transaction. Qualitative interviewees confirm this interpretation. In France there is very little bond between the school system and the companies. The transition from the first towards the second is not organized. It is what generates this phase of transition. The companies and the school system reject a function of socialization which normally should be of their responsibility. The costs of this system are deferred on the employees on the one hand and the State on the other hand. The use of the personal relations in the search for an employment is not a suitable indicator for this population of young people. It is more interesting to take in account the whole of the assets which make it possible to be recognized and accepted in a professional milieu. This constitutes an operational definition of the social capital for the study of the labor market.

Social Capital in Schools

Anne Bert Dijkstra & René Veenstra
University of Groningen, The Netherlands

The study of educational opportunities in a society is a prominent theme in the sociology of education and stratification research. Education constitutes an important link in the transition of inequality between generations. For the explanation of this relationship, many conditions have been taken into consideration, e.g. inherited intelligence, social, financial and cultural status of the parents, peers, the neighborhood, as well as characteristics of the school. However, the mechanisms that explain educational achievement are still not clear. To our mind, social capital theory might contribute in finding an answer to questions about equality and equity in education, especially regarding relational and communal resources based explanations. Research into social capital is carried out mainly from two angles. The first approach focuses on the resources of others that are available through relations in ego-networks. In the second approach the emphasis is on social capital as a public good. Coleman's work on functional communities is central to this approach. Strangely, both lines co-exist side by side up to now. They have mainly been applied to different domains, but even if the same social area is considered, e.g. education, there is not much cross-fertilization or integration. Therefor, the major aim of this SCALE project focusing on the field of education, is to determine the relative importance of both types of social capital in educational attainment.

Using longitudinal data on 7,300 students at 150 schools in the Netherlands, we discuss the importance of being part of a functional community, as well as the religiousness of students as an alternative interpretation of this effect, for their scholastic achievement in high school. According to Coleman and Hoffer a functional community strengthens the educational opportunities of students. Not clear, however, is to what extent the functional community effect can be understood through the religious characteristics of Coleman's functional community as well. The mains questions in our paper are: Does a functional community exert influence on the achievement of students, and to what extent does the religious background of students offer an alternative explanation for this effect? We expect that a functional community is beneficial for students who are religious and actively involved in the community. In order to answer these questions, we use descriptive and multilevel analyses. We conclude that the differences between schools are large. Only 11 out of all schools are part of a functional community. For these functional community schools, no effect on achievement is found after controlling for religious background. For the students religiosity positive as well as negative effects on scholastic achievement are reported.

Good Networks and Good Jobs: The Value of Social Capital To Employers and Employees

Bonnie H. Erickson
University or Toronto, Canada

Some good jobs, and no bad jobs call for important work with people outside the firm. Thus social capital, or a network rich in varied external contacts, is valuable to employers and included in their hiring requirements for some upper level jobs. Social capital is also valuable for employees; employees with more social capital get higher incomes and are more likely to be managers. Similarities among jobs and similarities among bundles of hiring requirements (including various combinations of both social and human capital) define each other in a dual structure that expands our understanding of jobs, capitals, and the hiring process.

Role and Rise of Social Capital

Michel Forsé
Lasmas - Fresco, Paris, France

Social capital can be analyzed at an individual or a collective level. At the individual level, personal networks have a significant impact on status attainment. Using the French labor force survey (INSEE, 1998), log-linear models show that the type of network mobilized to find a job is mainly influenced by level of education, even when controlled by social origin, and alters occupational level rather than wages. For people looking for a job, using personal relationships is more common nowadays than thirty years ago. At the collective level of analysis, social capital is a community resource in its own right. In industrial and urban societies, as stated by Simmel, interest communities (like non-profit organizations) are replacing traditional communities which corresponded to a few small and nested social circles. The new social circles are more numerous, larger and overlap. This long-term trend seems also to be mid- term. From several standpoints, in France social participation has increased during the last thirty years. In the USA, using the GSS data, the same holds true. Furthermore, it should not be forgotten that more and more people are involved in web communities that also represent a collective facet of social capital. At both level of analysis, the different indicators used here, as elsewhere, show that the role of social capital should not be neglected and has probably mildly risen over the last thirty years.

Measurement of Individual Social Capital

Martin van der Gaag and Tom Snijders
University of Groningen, The Netherlands

During the last decades, the developing research field of social capital has met with several problems, among which standardization of its measurement. The main objective of this paper is to discuss the theoretical foundations of a to be developed multi-dimensional measurement instrument for individual social capital, that combines insights of existing techniques. Both rational choice theory and Lin's (1999) 'network theory of social capital' will form the basis of a generally applicable, cross-sectional measurement instrument. Issues addressed will be relationships and resources in several life domains, their availability, characteristics of the individual and her network members, investments in relationships, and the possible implications of network structure. Several approaches to aggregation of these data, among which the one recently proposed by Snijders (1999) will be employed in order to develop a parsimonious, reliable way of quantitative individual social capital representation.

Social Capital and the Governance of Forest Resources

Clark Gibson, John Williams and Elinor Ostrom
Indiana University, Bloomington, IN USA

Given recent research linking forests and the global carbon budget, forest management has become a central political issue at the national and international levels. If forests are to play a central role in reducing the threat of global warming as well as other important environmental issues, government policy toward forest management becomes pivotal. To improve outcomes, contemporary forestry policies in developed and developing countries seek to shift some control over forest management to the community level. In a fundamental sense, such community level forestry policies seek to use the social capital of communities to

help manage forests. But despite the centrality of social capital to community forestry plans, neither national governments nor international bodies have a very good understanding of the role played by social capital in forest management at the local level. Since communities through forest management could represent a solution to important environmental concerns, we argue that it is critical to understand the role played by social capital in the community-level management of forests. This paper seeks to evaluate the role of social capital in the local governance of forests. It does so by analyzing cross-national, panel data gathered at the community level in 70 sites representing 11 countries. We find that different measures of social capital have a measurable effects on the condition of forests. Taken together, there is evidence that social capital matters to forest conditions, regardless of national government policy.

Measuring Social Capital by Network Capacity Indices

Ove Frank
Stockholm University, Sweden

The social capital of an organization or an individual can be conceptualized as embedded resources in a social network that provides an appropriate environment for the organization or individual. Various ways of measuring such resources by capacity indices are discussed. In particular, it is noted that some of the definitions of network capacity have similarities with common indices of network centrality. The measurement problem is conveniently approached by introducing a probabilistic network model which allows capacity to be predicted from estimates of the availability of resource links in the network. The model is also used to derive and compare theoretical capacity expressions for some simple network structures.

Social Capital in Everyday Life Some Information from a Large Scale Study

Alain Degenne, Marie Odile Lebeaux, Yannick Lemel
CREST - Laboratoire de Sociologie Quantitative
MALAKOFF, France

This paper covers kin and non-kin contacts that households can muster to help perform routine chores and odd jobs around the home. Numerous researchers have studied support networks but restricted themselves to the poor, elderly and ethnic minorities. We focus on a fairly large sample representative of all households using the French Modes de Vie survey. The Modes de Vie survey, part of a more general research program, was a joint undertaking by the French national scientific research center (CNRS) and the national statistics bureau (INSEE) in 1988/89. All types of domestic production in 7,000 households were covered. The survey was performed with two or three interviews, depending on the amount and diversity of domestic production encountered. Households were asked to complete a household appliances & expenses diary to obtain an inventory of manufactured goods in the household, size of food reserves and consumer expenses. Each head of household and spouse were also given individual diaries and asked to record all their activities on a given day. The questionnaires targeted a description of the household and close relatives, support exchanges with outsiders, wife's professional asset value to her husband, description of the dwelling and share of furniture and other home improvements produced by the household. This yielded a picture of, among other things, who did what in the average French household when it came to food, housework, sewing, home repairs, gardening and childcare. The survey used a variant on standard name generators based on actual exchanges with a list of 18 types of informal help. Responses were noted on grids plotting types of help listed in the rows against partner households in the columns. One grid served for exchanges between kin households while exchanges with non-kin households were recorded on a separate grid. The following data was enumerated for each partner household of each household surveyed: occupation of the head of household, household members, type of link to household surveyed and physical distance between the two households. Each exchange was noted as given, received or reciprocal. The issues behind our assessment of the data will be twofold. First we will assess the real asset value of support networks. Many researchers have extensively explored mutual support in the family but few compare exchanges among family members with those among friends and neighbors, for example. Yet nothing suggests non-kin support can be safely ignored and our results show the opposite. The nature and asset value of relations in everyday life differ between kin and non-kin. Second we will assess the validity of the "social capital" metaphor for this case. If, among other points, support networks are definitely a resource, we might expect households to accumulate this resource purposefully and will be checking to see if the data confirm this idea.

Inequality in Social Capital:
Evidence from Urban China

Nan Lin
Duke University, Durham, North Carolina

A critical issue for social capital research is the extent to which inequality in social capital contributes to social inequality across social groups. This paper conceptualizes this issue by proposing the analysis of two processes from the capital perspective: capital deficit and return deficit. Capital deficit refers to the extent to which different social groups, for reasons of investment or opportunities, have come to possess differential quality or quantity of capital. Return deficit refers to the extent to which a given quality or quantity of capital generates differential returns for different social groups, due to differential mobilization strategies, agent efforts, or institutional responses. Since it is assumed that social inequality results from inequality in capital, then it becomes important to understand inequality in capital. These formulations help clarify the mechanisms by which inequality in various types of capital, including social capital, emerges for different social groups, and how it potentially affects social inequality among members between the groups. Data from urban China residents was used to explore these mechanisms for male and female attainment in the labor market. The results confirm that Chinese female workers suffer a capital deficit in social capital as well as human and institutional capital. Males show access to a greater number of occupational and political positions, to higher positions in hierarchies, and to a greater variety of positions. On the other hand, there is some evidence that females do not particularly suffer from a return deficit in social capital upon entering the state sector, gaining higher ranked positions, or having higher wages. One clue why females are able to bridge the gap is due to the nature of ties used to access social capital. Females seem to rely more on kin ties to access social capital than males. Since stronger ties (kin ties) enhance access to political social capital, due to the need for trust and commitment in such relations in China, some females, relying on their spouses and spouses of kin, might be able to better access political social capital which help overcome their disadvantages in entering the state sector, and gaining higher ranked positions and better wages. The research agenda outlined and the empirical study explored in the present paper suggest that systematic empirical investigations equipped with specific measures and designs to flush out institutional and cultural variations can be fruitful in advancing understandings about capital inequality and social inequality for different social groups, on different social inequalities, and in different communities and societies.

Strategic Models of Network Formation

Sanjeev Goyal
Erasmus University, Rotterdam, The Netherlands

Traditionally, sociologists have been inclined to the view that individual action is determined by social structure, while economists have tended to ignore the role of social structure altogether. In recent years, there has been interesting work, both by sociologists and economists, that attempts to bridge this difference in approach. An important part of this work has been the research on networks. Several researchers have documented the empirical relevance of social and economic networks. At the same time, theoretical models have highlighted their role in explaining phenomena such as stock market volatility, collective action, the career profiles of managers, and the diffusion of new products, technologies and conventions. These findings have led to an examination of the process of network formation. In this talk, I will discuss some strategic models of network formation.

An Essay on Social Capital: Looking for the Fire Behind the Smoke

Martin Paldam and Gert Tinggaard Svendsen*
Aarhus University, Aarhus, Denmark

Social capital is defined as the density of trust. It is related to production by a key hypothesis: social capital determines how easily people work together. An easy-to- use proxy (Putnam's Instrument) is the density of voluntary organizations. Social capital might be a new production factor to be added to human and physical capital, or it might enter as a reduction in transaction or monitoring costs. Direct and indirect ways to measure social capital are discussed. The critical question is whether social capital can be changed. That is,

can self enforcement replace third party enforcement? We consider how much harm totalitarian regimes do to social capital when they expand their scope of area of control.

* forthcoming in: *European Journal of Political Economy*

Information and the Creation of Social Capital: An Experimental Study

Arno Riedl and Frans van Winden
CREED, Amsterdam, The Netherlands

In this study we investigate experimentally the relation between the creation of social capital and helping behavior under different information conditions. In the experiment subjects play first a 2-person public good game and in a second stage a dictator game where one of the two partners in the public game plays the role of the dictator. The dictator has the possibility to distribute an amount of money between herself and her partner and to distribute the same amount between herself and a stranger. In place of giving money to the other subjects the dictator also has the possibility to punish the two non-dictators by taking money from them at costs that are larger than the money taken. In three different conditions we manipulate the information about the dictator game stage of the experiment. (i) In the 'no information' condition subjects know during the public good game only that there will be a second part of the experiment do, however, not know the actual content of this second part. (ii) In the 'partial information' condition subjects know already at the beginning of the public good game that thereafter a dictator game will be played. They do, however, not know who will be the dictator in the second part. (iii) In the 'full information' condition subjects know at the beginning of the public good game not only that there will be a dictator game thereafter but also who will be in the role of the dictator and who in the role of the non-dictator. With the help of these three treatments we are able to investigate if investment in social capital takes place and how it is related to the information people have about the possibility of needed help in the future. Furthermore, by looking at the relation between investment in social capital of a non-dictator and money received in the dictator game, it can be studied if investment in social capital actually pays.

Social Networks and Performance at Work:
An Attempt at Studying the Returns of Social Capital in Doing one's Job

Beate Völker and Henk Flap
Utrecht University ,The Netherlands

It is a well-established fact that a person's social network facilitates job attainment, but is it also productive while doing one's job? What kind of effects do networks at the workplace have on an individual's job performance? In this paper, we will describe effects of work- related networks of ties to colleagues and to superiors on job performance and attempt to explain these effects as a consequence of the instrumental value of social capital. We further look into the possible goal specificity of social capital, i.e., whether social capital is an all-purposive good or only productive in the attainment of a particular goal. This question can be inquired, inter alia, by studying the effects of the more private, not work-related part of someone's network relations on performance at work. We use data from our national representative survey on social networks in the Netherlands (the social survey of the networks of the Dutch, SSND), which started in April 1999 and which will end in December 1999. We aim at a sample of 1000 respondents. At the moment 700 interviews have been completed, however in this paper, only data on 200 respondents are analyzed, since the rest is not coded yet. We describe the variation in ratings of own work performance of our respondents, with respect to performance quality and quantity. Next, we test our expectations on network influences on these self-ratings of performance.

1999 Creation and Returns of Social Capital: Social networks in education and labor markets

Department of Economics, University of Amsterdam
December 9-11, 1999

The work-conference took place in the context of the research program "Creation and returns of social capital: Social networks in education and labor markets" (SCALE). The program was initiated by Henk Flap (University of Utrecht), Tom Snijders (University of Groningen) and Frans van Winden (University of Amsterdam) and funded by The Netherlands' Organization for Scientific Research NWO.

To date, research on social capital has been characterized by an ad hoc nature of the theoretical assumptions and measuring instruments used. The underlying aim of the conference is to contribute to a theoretical integration as well as standardization and coordination of empirical research on the significance of social capital.

International experts in the field of research on social capital present the 'state of the art' concerning the development of theories, measuring instruments and empirical research. Attention has been paid to achieve a balance among the speakers in their expertise regarding, on the one side, the development of theories, methods and empirical research (experimental as well as survey research), and, on the other side, their disciplinary background (economics, sociology and statistics). Further, first results of the four research projects that are included in the research program will be presented and discussed for the first time. The projects deal with experimental research on investment in social relationships, studies of social capital in school and at work, and measurement issues as well, while employing a large-scale data collection ('Survey on the Social Networks of the Dutch', SSND).

Organization
The conference was organized by the SCALE research group at CREED/University of Amsterdam, ICS/University of Groningen, and ICS/Utrecht University.

Sponsors: CREED, ICS (Groningen and Utrecht), KNAW, NWO, and Tinbergen Institute.

The Strength of Weak Ties: a Simulation Study of Network Evolution

Phil Bonacich
University of California Los Angeles

It has often been pointed out (Vanberg & Congleton 1992; Orbell & Dawes 1993; Kitcher 1993; Majiski et al 1997) that the pessimistic inferences about the fate of cooperation in the Prisoners' Dilemma game may be unwarranted. Unlike the case in prisons, actors can often choose whether or not to interact based on the cooperative histories of their potential partners. The ability to avoid any interaction with likely non-cooperators can give cooperative strategies an evolutionary advantage. Similarly, I will argue, the scope condition ordinarily assumed in network exchange research – that the exchange network is unchanging – magnifies the degree of inequality present in exchange networks. There are many situations in which dissatisfied and exploited actors can change their positions. As we shall see, the possibility of changing positions may (or may not) reduce the inequality generated by exchange networks. This means that the validity of theories designed to predict power in networks are often inapplicable; the outcome is often not, as the theories predict, growing inequality, but rather network change maintaining a high level of equality. In addition to pointing out the limitations of existing theories of network power, this paper also has a more positive goal. I attempt to describe the stable forms toward which exchange networks evolve and how this evolution depends on the initial form of the exchange network.

The Constitution of Social Capital in the Transition Phase from School to Labor Market in France

Alain Degenne
Universite de Caen, France

I would like to base my purpose on examples concerning the professional transition from the young people in France to highlight the interest of a concept of social capital. I will thus not seek to give a general definition of the social capital but I adopt the point of view of Sandefur and Lauman who think that one can give a useful definition of the social capital only with reference to one result which one seeks to explain. Various researches which we have made for five years show that the transition is a process which proceeds according to rhythms which vary with the people. We chose to retain a typology of trajectories as significant variable of the transition. In France the young people entering the labor market know a phase of very great instability with recruitment only but for jobs of short duration. This phase lasts approximately two years and step by step the majority obtains a stable employment. My interpretation is that young people were subjected to a phase of socialization at the labor market, phase during which they learn the rules and the language which enables them to be "recognized" and accepted in the professional environment they integrate. Then, they seem to be able to assert at the same time a status and wages. This first period is also a testing period and a selection. In this precise case, I associate the social capital with what is acquired in this phase: a knowledge of the rules of the professional environment, practices of behavior at work, a set of personal relations which make that the recruiting is the result of a whole process and not a specific transaction. Qualitative interviewees confirm this interpretation. In France there is very little bond between the school system and the companies. The transition from the first towards the second is not organized. It is what generates this phase of transition. The companies and the school system reject a function of socialization which normally should be of their responsibility. The costs of this system are deferred on the employees on the one hand and the State on the other hand. The use of the personal relations in the search for an employment is not a suitable indicator for this population of young people. It is more interesting to take in account the whole of the assets which make it possible to be recognized and accepted in a professional milieu. This constitutes an operational definition of the social capital for the study of the labor market.

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expect that a functional community is beneficial for students who are religious and actively involved in the community. In order to answer these questions, we use descriptive and multilevel analyses. We conclude that the differences between schools are large. Only 11 out of all schools are part of a functional community. For these functional community schools, no effect on achievement is found after controlling for religious background. For the students religiosity positive as well as negative effects on scholastic achievement are reported.

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Duke University, Durham, North Carolina

A critical issue for social capital research is the extent to which inequality in social capital contributes to social inequality across social groups. This paper conceptualizes this issue by proposing the analysis of two processes from the capital perspective: capital deficit and return deficit. Capital deficit refers to the extent to which different social groups, for reasons of investment or opportunities, have come to possess differential quality or quantity of capital. Return deficit refers to the extent to which a given quality or quantity of capital generates differential returns for different social groups, due to differential mobilization strategies, agent efforts, or institutional responses. Since it is assumed that social inequality results from inequality in capital, then it becomes important to understand inequality in capital. These formulations help clarify the mechanisms by which inequality in various types of capital, including social capital, emerges for different social groups, and how it potentially affects social inequality among members between the groups. Data from urban China residents was used to explore these mechanisms for male and female attainment in the labor market. The results confirm that Chinese female workers suffer a capital deficit in social capital as well as human and institutional capital. Males show access to a greater number of occupational and political positions, to higher positions in hierarchies, and to a greater variety of positions. On the other hand, there is some evidence that females do not particularly suffer from a return deficit in social capital upon entering the state sector, gaining higher ranked positions, or having higher wages. One clue why females are able to bridge the gap is due to the nature of ties used to access social capital. Females seem to rely more on kin ties to access social capital than males. Since stronger ties (kin ties) enhance access to political social capital, due to the need for trust and commitment in such relations in China, some females, relying on their spouses and spouses of kin, might be able to better access political social

capital which help overcome their disadvantages in entering the state sector, and gaining higher ranked positions and better wages. The research agenda outlined and the empirical study explored in the present paper suggest that systematic empirical investigations equipped with specific measures and designs to flush out institutional and cultural variations can be fruitful in advancing understandings about capital inequality and social inequality for different social groups, on different social inequalities, and in different communities and societies.

Strategic Models of Network Formation

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Traditionally, sociologists have been inclined to the view that individual action is determined by social structure, while economists have tended to ignore the role of social structure altogether. In recent years, there has been interesting work, both by sociologists and economists, that attempts to bridge this difference in approach. An important part of this work has been the research on networks. Several researchers have documented the empirical relevance of social and economic networks. At the same time, theoretical models have highlighted their role in explaining phenomena such as stock market volatility, collective action, the career profiles of managers, and the diffusion of new products, technologies and conventions. These findings have led to an examination of the process of network formation. In this talk, I will discuss some strategic models of network formation.

An Essay on Social Capital: Looking for the Fire Behind the Smoke

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Social capital is defined as the density of trust. It is related to production by a key hypothesis: social capital determines how easily people work together. An easy-to- use proxy (Putnam's Instrument) is the density of voluntary organizations. Social capital might be a new production factor to be added to human and physical capital, or it might enter as a reduction in transaction or monitoring costs. Direct and indirect ways to measure social capital are discussed. The critical question is whether social capital can be changed. That is, can self enforcement replace third party enforcement? We consider how much harm totalitarian regimes do to social capital when they expand their scope of area of control.

* forthcoming in: *European Journal of Political Economy*

Information and the Creation of Social Capital: An Experimental Study

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In this study we investigate experimentally the relation between the creation of social capital and helping behavior under different information conditions. In the experiment subjects play first a 2-person public good game and in a second stage a dictator game where one of the two partners in the public game plays the role of the dictator. The dictator has the possibility to distribute an amount of money between herself and her partner and to distribute the same amount between herself and a stranger. In place of giving money to the other subjects the dictator also has the possibility to punish the two non-dictators by taking money from them at costs that are larger than the money taken. In three different conditions we manipulate the information about the dictator game stage of the experiment. (i) In the 'no information' condition subjects know during the public good game only that there will be a second part of the experiment do, however, not know the actual content of this second part. (ii) In the 'partial information' condition subjects know already at the beginning of the public good game that thereafter a dictator game will be played. They do, however, not know who will be the dictator in the second part. (iii) In the 'full information' condition subjects know at the beginning of the public good game not only that there will be a dictator game thereafter but also who will be in the role of the dictator and who in the role of the non-dictator. With the help of these three treatments we are able to investigate if investment in social capital takes place and how it is related to the information people have about the possibility of needed help in the future. Furthermore, by looking at the relation between investment in social capital of a non-dictator and money received in the dictator game, it can be studied if investment in social capital actually pays.

Social Networks and Performance at Work:
An Attempt at Studying the Returns of Social Capital in Doing one's Job

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It is a well-established fact that a person's social network facilitates job attainment, but is it also productive while doing one's job? What kind of effects do networks at the workplace have on an individual's job performance? In this paper, we will describe effects of work- related networks of ties to colleagues and to superiors on job performance and attempt to explain these effects as a consequence of the instrumental value of social capital. We further look into the possible goal specificity of social capital, i.e., whether social capital is an all-purposive good or only productive in the attainment of a particular goal. This question can be inquired, inter alia, by studying the effects of the more private, not work-related part of someone's network relations on performance at work. We use data from our national representative survey on social networks in the Netherlands (the social survey of the networks of the Dutch, SSND), which started in

April 1999 and which will end in December 1999. We aim at a sample of 1000 respondents. At the moment 700 interviews have been completed, however in this paper, only data on 200 respondents are analyzed, since the rest is not coded yet. We describe the variation in ratings of own work performance of our respondents, with respect to performance quality and quantity. Next, we test our expectations on network influences on these self-ratings of performance.

Second International Network Sampling Workshop (INSW)
2 – 4 March, 2000

Hotel Beaumont, Wycker Brugstraat 2, 6221 EC Maastricht, the Netherlands

This workshop is organised by Marinus Spreen (University Maastricht), Ove Frank (Stockholm University) and Tom Snijders (University of Groningen). Hotel Beaumont, Wycker Brugstraat 2, 6221 EC Maastricht, the Netherlands. The hotel is located in the inner city of Maastricht, about 500 m. from the Central Railway

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Estimating the effective rate of sex partner change from individuals with sexually transmitted diseases

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The effective rate of partner change is an important variable for determining whether an epidemic of a sexually transmitted disease (STD) occurs. It is essential for understanding the transmission dynamics of STDs. The study addressed the problem of estimating the effective rate of partner change. Under certain conditions the mean rate of partner change in STD patients was found to estimate the effective rate of partner change in the general population. The study concluded that to estimate the effective rate of partner change in a population, the use of surveys of patients with STD provides a simpler and less costly alternative to population surveys of sexual behavior.

Estimation with Link-Tracing Sampling Designs: A Bayesian Approach

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In link-tracing designs, social links are followed from one respondent to another to obtain the sample. For hidden and hard-to-access human populations, such sampling designs are considered the most practical way to obtain a sample large enough to study. In this paper, we propose a Bayesian approach for the estimation problem. For problems using link-tracing designs, it is quite often that there are prior information on the characteristics that one wants to estimate. Thus, using this information effectively via a Bayesian approach should yield better estimators. Also, under the Bayesian setup, obtaining interval estimates and assessing the accuracy of the estimators can be done without much added difficulties whereas such tasks would be very difficult to perform using the classical approach. In general, a Bayesian analysis yields one distribution (the posterior distribution) for the unknown parameters, and from this a large number of questions can be answered simultaneously.

Comparisons of Network Information Collected with Specific versus Non-specific Network Instruments in an European Cohort of TC ("Therapeutic Community") Clients

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Comparisons between the French sample (n=72) and the whole European sample (n=724) show similar distributions for several network items, when using a non-specific network instrument, EuropASI (i.e., the European version of the Addiction Severity Index). For example, at the question "With whom do you spend most of your free time?", 43% of the French sample (FS) vs 45% of the European sample (ES) answered drug/ alcohol user friends, about 10% of the FS vs 12% of the ES answered non-user friends, and 5.6% of the FS vs 5% of the ES answered family members drug/alcohol users. Moreover, when comparing the patterns of answers from the other European countries with the whole present working sample, several countries show patterns close to those of the French sample (Italy, Spain, Scotland), while other countries have a different pattern (clients from Sweden and Germany report lower percentages of friends with current alcohol or drug problems, while clients from Norway and Belgium report higher percentages of the same category of network members). On another hand, the network information collected with the MSNA (Maastricht Social Network Analysis), a specific network instrument, validates the network information from EuropASI concerning the size of the friends sector, for a majority of clients (i.e., clients who report spending their free time with drug/alcohol user friends). More specifically, from a network sampling prospective, for the same category of clients, there seems to be a trend of counting most of their user friends as "close friends".

Social Network Analysis Using Sample Data on Perceived Structure and Reported Composition of Personal Networks

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A social network is considered which is too large to observe in its entirety. The network consists of ties between individuals of k different categories. The number k is given but the categorical frequencies are unknown. The numbers of ties within and between the categories are also unknown. A sample of individuals is selected to report on the categorical composition and the perceived tie structure of their personal networks. Practical matters of observation and identifiability of network members are noted, and various ways of handling statistical inference are discussed. It is argued that in many practical situations there is a need for both a probabilistic sample selection modelling and a probabilistic network modelling. The ideas are illustrated by discussion of the statistical analysis of a large number of personal networks collected in a health survey on sexually transmitted diseases.

Human contact networks and the spread of airborne infectious diseases.

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Airborne infectious diseases spread through human contact networks from person to person by respiratory droplets. Many of these diseases, such as measles, mumps and rubella primarily affect children, which means that age is an important variable that indicates the risk for acquiring the disease. Therefore modelling studies of these diseases require a proper estimation of age-specific contact rates. The contact rates can be estimated directly if the relevant at-risk events for an infection can be defined and quantified. One such at-risk event might be a conversation, as if two people are close enough to converse with each other then they are probably close enough to pass on infections. In this paper we present observed age-specific conversation rates as reported by an age-stratified sample from a population. We explore the following questions: 1.What statistical model describes adequately the self-reported contact rates? 2.To what extend can the self-reported contact rates explain the observed age-specific immunity (as estimated by presence of specific antibodies determined in blood samples taken from the study population)? 3.What vaccination coverage is needed to reach elimination of the disease?

Estimation of Population Characteristics from One-wave Snowball Samples in Structured Populations

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We consider a one-wave snowball sample in a population composed of individuals of two kinds, say, A and B (e.g., drugusers with, and without, a home). It is assumed that relation frequencies between A-A, A-B, and B-B individuals can be different, and that the initial sample has different sampling fractions in both subpopulations. We derive model-based and design-based estimators for population means as well as population totals of a quantitative variable in this population. This extends our earlier work on the estimation of the size of the population.

Partitioning of directed networks

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We present an efficient method for revealing the hidden structure of directed networks. An Euclidean distance d is define on the vertex set of the underlying abstract digraph D. That set is then isometrically embedded in Rn by positioning the vertices with respect to the distance d between them with the help of Principal Component Co-ordinates. Finally, that embedding is partitioned by iterative processes. The choice of the distance is fundamental since it influences the shape of the embedding. The square of the distance d we use is the half sum of the Czekanovsky-Dice coefficient respectively applied to the predecessors and successors boolean matrices. The choice of that coefficient is guided by previous results obtained by De Fraysseix and Kuntz on non-oriented graphs. The separation between predecessors and successors is a way to take into account the orientation in the expression of the distance. A hierarchical cluster analysis with Ward strategy may be performed to partitioned the points of the Euclidean embedding. That method is known to be very efficient for Euclidean distance table. But for large networks, a reduction of dimension may be suitable before partitioning, in order to lower the calculation time. To empirically evaluate the effect of such a reduction, hierarchical cluster analysis on the Euclidean distance table is compared with a similar analysis on a configuration of lower dimension. We present some results for different networks.

Pupils' networks in high schools

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A study in Dutch high schools in 1987-1990 showed that the educational climate of the schools had little impact on the petty crime of their pupils. However, analysis of the impact of school friends, stressed the impact of pupils' networks: the spatial correlations between best friend relationships and petty crime were high. Because of the limits of the study a new study was conducted in 1995. All pupils of the third grade of an intermediate level of education in 23 schools filled in a written list about delinquent behaviour and eight different kinds of relationships with fellow pupils. The procedure was as follows: each pupil was given a personal code and a code list of all fellow pupils in the same year. The pupils filled in their own identification code on the form. For the network items all subjects were instructed to fill in the codes of the other pupils in question per item. In 1996, all pupils of the fourth grade in 19 of the 23 schools filled in the same delinquency and network items, thus providing two wave data of 990 pupils in 19 networks. The procedure has several important merits. One of the advantages is that it is possible to analyse on the dyad level, for instance symmetry in personal relationships can be asserted, and the association between individual behaviour and relationships can be analyzed directly. Another merit is that complete networks can be studied, for instance their density or segmentation can be compared. Furthermore, multi level hypotheses can be tested about the influence of network structure on processes on the dyad or individual level. However, there are also some new problems. The first problem is that the importance of pupil's networks can differ between pupils: some have their most important friends outside school, other see all their important peers within the same classroom. To control for this, new statistical procedures are needed. These procedures are scarce, as is the software to analyze effectively and efficiently.

Respondent-Driven Sampling

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With respondent-driven sampling designs initial respondents are used to find additional research participants. Methods such as coupon based recruitment can provide substantial cost savings over those in which investigators need to find the additional members of a hidden population themselves. In some situations, a portion of the hidden population my be accessible only through respondent-driven methods. In this talk models and statistical aspects of respondent-driven sampling will be discussed.

Space and Social Support Networks of the Poor: Parameters and Sampling Problems

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The Institute for Social and Economic Geography at the KULeuven studies social exclusion via Polanyi's model of economic integration. As geographers, we look for the spatial influences on the economic integration of the poor. Research focuses on the neighbourhood level. The importance of reciprocity to economic integration of the poor evokes our interest in social networks. What we try to measure in order to establish the influence of space on reciprocity is twofold: first, the influences of physical and social characteristics of space on personal network structure; second, the influences of network characteristics on reciprocal survival strategies. The first aim demands a network sampling method that accounts of meeting places and local social context. The second aim implies the study of social support networks. The poor's networks are seemingly different from those of other social strata, and they aim at different kinds of support. This affects our choice of network parameters. Interviewing the poor about their survival strategies implies some methodological difficulties, since many strategies are illegal or taboo. Interviewees are not easily found and are not inclined to reveal much about their social network. Revealing this hidden information means using qualitative sampling methods instead of representative sampling.

Combining cluster sampling and link-tracing sampling for estimating the size of hidden populations

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In this talk we will present a sampling methodology, which is still in progress, for estimating the size of a hidden population, like drug users, within a region, like a city or a town. We will assume that we can construct a sampling frame of public places, like bars, parks, city blocks, etc., where members of the target population can be found. However, we will not assume that the sampling frame covers the whole population of interest. Using an ordinary cluster sampling a sample of sites is selected, and by means of ethnographic methodologies the members of the target population who ``belong" to each sampled site are identified. Then for each sampled site we trace links between the place and the members of the target population who do not belong to that particular site. We estimate the size of the portion of the target population located in the region not covered by the sampling frame by a likelihood estimator. We propose to estimate the size of the other portion by some estimators which can be seen like combinations of design-based and model-based estimators. Variance estimators, which take into account the sampling design, are also proposed.

Measuring peer influence in adolescent smoking research; Past, present and future perspectives

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Research on adolescent smoking has consistently identified a strong relationship between the behaviour of peers and individual adolescent behaviour. These relations are strong according to behavioural science standards, and are replicated in many studies. As a consequence, peer influence is widely and popularly believed to be the major determinant of adolescent cigarette use. However, the importance of peer influence as a cause of adolescent smoking behaviour can be questioned. Four issues should be considered when interpreting measures of peer influence. The first issue is the psychological concept of projection. Second, the majority of influence studies have not separated the effects of friendship selection from the effects of peer influence. The third issue can be ascribed to a lack of consensus regarding operationalisation of the smoking initiation continuum. Fourth, current sociometric adolescent smoking studies do not describe the personal friendship network of an individual. Prominent methodological tools that have been applied in the past to disentangle the peer influence paradigm with regard to adolescent smoking are described. Then, shortcomings of methodological tools currently applied in innovative smoking research will be argued. Finally, the usefulness of personal network analysis is discussed as a tool in solving the current theoretical and practical issues of measuring peer influences in adolescent smoking research.

Sampling polydrug users in an urban area: design and practical problems

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The Heerlen Drug Monitoring System is a system in which data are continually collected on drugs, drug use and networks of drug users within a certain region and over a certain period of time. The system is based on three pillars: community field work, the network of (key) informants and a random network sample. One of the main questions in Heerlen focuses on an estimation of the size of the drug using population and is answered by the sample survey. Data gathering for the survey was performed by six trained (drug-using) interviewers. The main goal of the social network part of the questionnaire was an estimation of the size of the drugusing population, but while applying Social Network Analysis additional information can be gained about several levels of inference: individual, relationship and network. The sampling frame consisted of a list from the institute for addiction care (CAD) containing the visitors from a low threshold service, Heroin Prostitution Project and methadone program. Selected respondents (egós) were

asked to nominate other drug users (alters). From these nominees a more or less a-select sample was drawn containing drug users not-in–treatment. As well in the sampling-stage as in the stages of approaching the respondents and conducting the interviews, several practical and methodological problems emerged: quality of the sampling frame, reliability of the interviewers and accessibility and co-operation of the selected respondents. It could be worthwhile to discuss implications of these limitations for the interpretation of the results.

A power law in reports of knowledge of subpopulation sizes

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A new power law is described. It connects the size of some subpopulation (a group of people defined by some criterion, e.g. those who are diabetics, or those whose first name is Robert) with what respondents say about their knowledge of this subpopulation. Two replicable versions of the power law exits. The first is that the mean reported number of members of a subpopulation reported as known to respondents varies as the square root of the size of the subpopulation. The second is that the mean proportion of respondents who report knowing anyone in a subpopulation varies approximately as the cube root of the size of the subpopulation. These findings are hard to explain from existing psychological theory. We discuss the effects this finding has on network scale-up methods which assume that the mean number reported would vary linearly with subpopulation size rather than as a square root. Adaptations of previous theory lead to some improvements in estimated sizes of subpopulations (when these are known and can be compared).

Random Walks Through Large Social Networks: What the real world actually looks like.

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As with populations of individuals, real-world networks are often too large to observe other than by sampling. There are various forms of network sampling but here the focus is on random sampling from the relevant sampling frames of ostensibly visible populations. The procedure discussed is the random walk sampling design, which typically involves an initial random sample from a conventional frame (eg, an areal frame), obtaining data on those (network associates) to who each initial person is linked, followed by – for each initial node – the random selection of one of these (network associates) to be the next network node visited on a random walk of the desired length through a large network. Some data from five studies carried out using a random walk design (in Canberra (Australia), in Atlanta (Georgia, USA) and in San Juan (Puerto Rico) are considered. Also discussed are some issues in determining how the 'real world' actually looks.

Network Snapshots Created by Epidemiologically-Relevant Interaction in Infectious Disease Outbreaks: Quantifying the role of different actors in outbreak networks

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Sampling – some procedure whereby a researcher goes out and actually selects or recruits respondents – is often seen as the only way to obtain information about large networks in society. In some instances, however, networks become visible as a result of individual activities and their consequences. When pathogens (bacterial, viral, etc.) are transmitted in the course of human interaction, for example, network structures may be exposed by routine disease surveillance and control activities. Here the focus is on networks and tuberculosis. It is suggested that the nature of tuberculosis and its transmission (airborne, by droplet nuclei) is such that ordinary social network concepts are not sufficient. Accordingly, the concept of an 'outbreak network' is introduced. It is further suggested that most currently available measures of the importance of different actors 'playing a role' in an outbreak, such as centrality measures, have serious limitations when used to study infectious diseases. Hence, the suspected infections transmitted (SIT) index is introduced. Some data on a tuberculosis outbreak, for which DNA 'fingerprints (RFLP/IS6110) were available are considered. Implications for observing networks in society and for disease control are discussed.

Albert, Fruzsina and David, Beata. 1999. About Friends. *Social Report 1998.* pp 270-287.

We know very little about friendships following the transition. In 1993 and in 1997, the Hungarian Household Panel study (HHP) asked the respondents about the number of their friends. Data was also gathered about specific inter-household transactions on the household level. Our paper is based on these data. As one of our points of departure, we assume that answers given to the questions "How many friends you have?" in the HHP provide the approximate size of an individual's intimate relations. Our second assumption is about the existence of a connection between the absence or the validity of inter-household exchange-relations and the social-demographic features of the head of the household on one hand, and the number of friends on the other hand. The available data reflect a decrease of the number of friends, an increase of those without friends and an increasing withdrawal from inter-household exchanges.

Angelusz, Robert and Tardos, Robert. 1999. Changing Patterns of Social Network Resources in the Nineties: Approaches and research preliminaries. *Social Report 1998.* pp 253-269.

Recently, interest in social network resources has increased in Hungarian social research. This increased attention can have historical and political, as well as scientific motives. As to the former, we can primarily refer to the features of Hungarian development which provided a special role for informality or the personal techniques to have matters settled in late Kadarite society. Undoubtedly, the importance of nexus or multi-layered contacts surfaced conspicuously in the world of that era with the generic features of shortage economy and the reciprocal networks of under-the-counter goods and services. The dualistic models based on intertwined formal and informal relations, i.e., latent network forms have emerged to the foreground of social research since the seventies.

Arber, Sara and Ginn, Jay. 1994. Gender differences in informal caring. *Health & Social Care in the Community*. 3, 19-31.

Men have hitherto largely been invisible in research on informal care. This paper examines gender differences in informal caring, focusing on gender differences according to the relationship between the career and care-recipient and the location of caring. The paper uses secondary analysis of the 1990-91 General Household Survey, which identified over 2,700 adults as informal carers. Four per cent of men and women provide care for someone living in the same household. More women than men, 13% compared with 10%, provide care for someone living in another household. Men carers are less involved in care provision than women, providing fewer hours of care each week, and are less likely to be the main career. However, gender differences are most marked among married carers, apart from those caring for their spouse, and least among unmarried carers. Married men can often rely on their wives to perform caring roles rather than performing them personally. Women carers are more likely to provide personal care than men carers, but the gender difference is least among those caring for their spouse or for disabled children. Cross-sex personal care is performed within the marital relationship and by parents caring for disabled children, but seldom by adult children caring for their parents or in more distant caring relationships. Evidence of cross-sex taboos in giving personal care is largely restricted to care provided in another household. Since the majority of elderly people in need of care are women, such cultural taboos may reinforce the pressure on mid-life women to care for mothers and mothers-in-law.

Boczkowski, Pablo J. 1999. Mutual Shaping of Users and Technologies in a National Virtual Community. *Journal of Communication*. 49(2), 86-

In this essay I analyze how technologies and users relate to each other in a national virtual community. I argue that a mutual shaping perspective is best suited to capture the complexity, unpredictability, and recursivity of the interactions among technological features and users' discourses and practices. Drawing from recent developments in the study of computer-mediated communication, multidisciplinary technology scholarship and social psychology of nationhood, I show the mutual shaping of hardware capabilities, national identities, collective remembering, software configurations, and coordination practices that took place during my investigation of the Argentine Mailing List.

Bourgeois, Friedkin, Michael and Noah E. 2000. Social Solidarity, Social Distance and Interpersonal Ties. Paper presented at the Annual Meeting of the American Sociological Association, 2000.

We examine three hypotheses at the foundation of theories concerned with the organization of social space and social solidarity in differentiated groups. The most important of these hypotheses is that interpersonal ties between actors in different positions of a social structure foster social solidarity; however, the theories are silent on the question of whether this effect of interpersonal ties is maintained regardless of distance that separates the positions of two actors in the group's social space. In addition, the current Zeitgeist on the organization of social space hypothesizes that both the occurrence of an interpersonal tie and interpersonal solidarity (with or without a tie) are negatively associated with the distance that separates the positions of two actors in social space. Thus, while interpersonal ties foster solidarity, social distance reduces the likelihood of interpersonal ties and solidarity (directly and indirectly via effects on the occurrence of ties). Our evidence suggests unqualified support only for the first hypothesis. Surprisingly, the expected negative effects of social distance on interpersonal ties and solidarity appear to be properties of particular forms of social organization and are not ubiquitous implications of social differentiation. These negative effects are more or less pronounced (even reversible) in center-periphery structures depending upon the extent to which the structure is centralized.

Caulkins, Douglas and Hyatt, Susan. 1999. Using Consensus Analysis to Measure Cultural Diversity in Organizations and Social Movements. *Field Methods*. 11(1), 5-26.

Consensus analysis, a technique developed in cognitive anthropology for analyzing structured interview data, produces three useful results: (1) a measure of the degree of agreement among informants about a domain of knowledge, belief, or practice; (2) the “culturally correct” information about that domain according to the pooled answers of the informants; and (3) a score for each informant representing that person's knowledge of the domain. Consensus analysis is not just for high-agreement domains, however. This article explores a typology for conceptualizing diversity in low-consensus domains, including (1) weak agreement, (2) turbulent, (3) subcultural, and (4) contested domains, using case study examples from an English social movement, a Scottish high-technology firm, and a Scottish business support and training organization. The typology helps measure and interpret diversity and change within organizations and social movements.

Davern, Michael. F1997. Social networks and economic sociology: a proposed research agenda for more complete social science. *American Journal of Economics & Sociology*. 56(3), 287-303.

The first goal of this paper is to develop four basic categories that form a foundation for social networks by synthesizing the theoretical content of the concepts that use the network metaphor. These four categories will be used to navigate through the existing literature and to demonstrate the utility of social networks for studying socioeconomic phenomena. This will be done in two parts. First the research that has already been done in the field of economic sociology will be summarized and second, new areas for the application of social networks in the study of socioeconomic phenomenon will be discussed.

Diez, Javier R. 1999. Innovative networks in manufacturing: some empirical evidence from the metropolitan area of Barcelona. Elsevier Science Ltd. 20, 139-150.

In order to make an evaluation of the regional innovation potential, which is decisively influenced by the existing relationships between the different actors of innovative networks within and/or outside the region, a written questionnaire was sent to firms of the manufacturing industry in the autumn of 1997. The focal point of the analysis lay in determining innovative activities within individual firms and cooperative relationships between different firms. After a short discussion about theoretical aspects of innovation-orientated regional development, this paper provides a brief introduction to the main characteristics of the responding firms as well as selected results concerning innovative activities within the firms, innovative cooperation, as well as obstacles to innovation and regional framework conditions. The results indicate that regional proximity matters differently. Innovative relationships with producer services and research institutions are stronger withing the region, those with suppliers, customers and competitors more with other regions in Spain and Europe. In short, the surveyed firms in the Metropolitan Area of Barcelona tend to cooperate more on a vertical basis and on a less international scale when it comes to innovation.

Linton C. Freeman (2000). Visualizing Social Networks. *Journal of Social Structure*. Volume 1, number 1.

This paper documents the use of pictorial images in social network analysis. It shows that such images are critical both in helping investigators to understand network data and to communicate that understanding to others. The paper reviews the long history of image use in the field. It begins with illustrations of the earliest hand-drawn images in which points were placed by using ad hoc rules. It examines the development of systematic procedures for locating points. It goes on to discuss how computers have been used to actually produce drawings of networks, both for printing and for display on computer screens. Finally, it illustrates some of the newest procedures for producing web-based pictures that allow viewers to interact with the network data and to explore their structural properties.

Friedkin, Noah E. 1999. Choice Shift and Group Polarization. *American Sociological Review*. 856-875.

I extend the theoretical domain of sociology into an area of social psychology that heretofore has been the exclusive domain of psychologists. Specifically, I develop a social structural perspective on the choice shifts that individuals make within groups. During interpersonal discussions of issues, choice shifts occur when there is a difference between group members' mean final opinion and their mean initial opinion. Explanations of choice shifts have emphasized group-level conditions (e.g. a norm, a decision rule, a pool of persuasive arguments, a distribution of initial opinions). A argue that choice shifts are a ubiquitous product of the inequalities of interpersonal influence that emerge during discussions of issues. Hence, I bring choice shifts squarely into the domain of a structural social psychology that attends to the composition of networks of interpersonal influence and into broader sociological perspectives concerned with the formation of status structures.

Fujimoto, Kayo. 2000. From Women's College to Work: Female Labor Market and Institutional Mechanism in Japan. Paper presented at the Annual Meeting of the American Sociological Association, 2000.

Network theory has been extended to examine how institutional linkages between schools and employers improve labor market processes via trusted information by pointing out the contribution of educational institutions to individual labor market success. However, little has been known about the embeddedness of institutional networks in female labor market. This article examines the mechanisms of institutional ties between women's college and employers by showing how they can facilitate labor market processes via trusted information on which nonacademic-related selection criteria are based. The result showed that junior-college students can be supported by school for getting jobs for large Japanese companies, which indicates that women's junior college plays a significant role in students' transition from school to work. This paper also addresses the effect of embeddedness of institutional linkages in female labor market on students' perception.

Garson, David. 1998. Neural Networks: An Introductory Guide for Social Scientists. *Methodology and Research Techniques*. 28(6), 753-

If you have decided to begin using neural network analysis, read David Garson's valuable guide. Garson gives you rules of thumb, examples, illustrations, and a rich list of references. If you are still deciding whether to use neural networks, you will want to consider sources beyond Garson. Garson's guide tells you how to use neural network models, not why you should. Although the book includes a substantial overview of applications in the social sciences (pp. 18-22), it is primarily a how-to.

Hooghiemstra, Erna. 6/99. Netherlands, Den Haag, Marriage and Migration:

Partnerchoice of Turkish and Moroccan living in the Netherlands. Committee on Family Research Seminar, International Sociological Association, Berlin.

This paper covers a part of my thesis. The thesis is about the process of partnerchoice of Turkish and Moroccan Migrants and their descendants who married in the Netherlands since 1975. The Majority of these groups, men as well as women, has chosen to marry a spouse who lived in the country of origin and eventually migrated to the Netherlands after marriage. Especially the second and so called in-between generation clearly has problems to decide what's the best choice to make: someone from here, or someone from there. The process of decision making reveals something of the way younger migrants are rooted in the different groups they are part of (the country of living, the migrant-groups, and the country of origin).

Klovdahl, Alden S. 1999. Intercultural network theory: A cross-paradigmatic approach to acculturation. *International Journal of Intercultural Relations*, 23, (4), 629-658.

The field of intercultural relations has devoted considerable attention to the idea of separate research paradigms. The distinctions between perspectives such as qualitative-quantitative, subjective-objective, functional-interpretive, etc., dominate theoretical and methodological writings. These distinctions are important for outlining the parameters of various research programs; however, many interesting issues in the cultural adjustment process deny the dichotomization of experience and require an approach that addresses a reality that is both reliable and present while at the same time situated and emergent. Recently our focus in the field has been trained on how we might bridge those distinct paradigms with a plausible intercultural theory. In the first portion of this article I outline three common research paradigms employed in intercultural relations. The social network perspective is then offered as a cross-paradigmatic research and theorizing approach. The conceptual history and relevant properties of social networks for intercultural research are described as part of the foundation for a theory of intercultural social networks that allows us to address the relational quality of intercultural interaction while acknowledging the stability of structural phenomena. I then propose seven assumptions and seven propositions comprising the beginning of a dynamic theory of intercultural social networks. Based upon the propositions put forward, future research avenues are suggested. I conclude that a socio-structural approach to acculturation, and the study of intercultural relations in general, is uniquely suited to capture and reconcile situated, emergent phenomena with reliable, present phenomena and increase our understanding of inter-cultural relations.

Li, Peter S. 2000. Overseas Chinese Networks: A Reassessment. *Chinese Business Networks: State, Economy and Culture*. pp 261-284.

Finally, the claim pertaining to the importance of guanxi in being able to generate a new economic force combining China and the Chinese diaspora is premised upon a weak conceptualization of guanxi that virtually includes any personal relations that exist in the international Chines community (see Lever-Tracy *et al*. 1996). It can be expected that when formal economic activities in investment, trade and economic exchanges are increased, there would be a corresponding increase in informal linkages at the more personal level. If this is the case, then guanxi formation may be a consequence of economic development, and not necessarily its cause. Indeed, the reported investment

behaviours of Chinese diaspora tycoons suggest that joint ventures of large projects are largely products of state policy and economic incentives, and not a natural cultural outcome arising from primordial guanxi (ibid.:197-212).

Maman, Daniel. 2000. Who accumulates directorships of big business firms in Israel?: Organizational structure, social capital and human capital. *Human Relations* 53 (5): 603-629.

This article studies which of the directors of the largest corporations in Israel were invited to sit on additional boards of directors between the years 1974 and 1988. The article compares organizational affiliations, and the human and social capital of directors who accumulate directorships with those who do not. The study uses logistic regression to discern which variables increase the likelihood of being invited on to an additional board. The findings strongly support the hypothesis that it is a combination of the structure of the national economy and human and social capital of the directors which determines who will join additional boards.

Menieta, Jorge G. and Schmidt, Samuel. 1999. {Spanish written} *The Political Network in Mexico: Models & Analysis Through Graph Theory.*

Mische, Ann and Pattison, Philippa. 2000. The Dynamics of Political Mediation: Global Structures, Local Processes. Paper presented at the Annual Meeting of the American Sociological Association, 2000.

This paper is the first in a series that uses algebraic modeling to examine the connection between global con-figurations and local processes. Building upon tripartite structural analysis (Fararo and Doriean 1984), these models allow us to conceptualize social settings as complex interpenetrations of individuals, groups, and/or discursive forms, as these are organized (and reorganized) across a series of events. In this first paper, we expand upon the algebraic technique of "Galois" or "concept" lattices, which describe patterns of intersection and inclusion among subsets of two or more mutually associated sets of entities. We use lattices to explore the global structure of relationships among youth, organizations, and events in the 1992 Brazilian impeachment movement. We begin with the simpler, *bipartite* lattices in order to examine relations of organizational co-membership and co-presence at events. We then extend this method to the *tripartite* case, in order to analyze interlocking systems of relationships among all three of these sets of elements. Substantively, this allows us to examine the dynamics of coalition building over the course of the impeachment mobilizations by showing how the participation of youth activists and their organizations shifted over three major stages in the movement. We find that a change from predominately "student" settings to more "civic" arenas of interaction involved the following path dependent process: (1) it was prefigured by certain features of the global structure that created opportunities for individual mediation; (2) such mediation contributed to a reconfiguration of social settings on both local and global levels; and (3) this reorganized or "emergent" structure allowed new forms of student leadership to gain public prominence.

Molm, Linda D., Peterson, Bretchen and Takahashi, Nobuyuki. 1999. Power in Negotiated and Reciprocal Exchange. *American Sociological Review*. 4, 876-890.

While classical exchange theorists excluded bargaining from the scope of their theories, most contemporary theorists have done the opposite, concentrating exclusively on negotiated exchanges with binding agreements. We analyze how the form of social exchange-negotiated or reciprocal-affects the distribution of power in exchange networks. These two forms of exchange differ in fundamental ways that affect how actors use power and the kinds of risk and uncertainty they face. We predict that these basic differences will affect the relation between the availability of alternative partners and actors' use of power, and will produce lower power use in reciprocal exchange than in negotiated exchange. We test our predictions in a laboratory experiment. The results support the underlying logic of our theory, partially support its specific predictions, and raise new questions about the importance of the different time perspectives required by negotiated and reciprocal exchange.

Park, Hong-Won. 1998. A Gramscian Approach to Interpreting International Communication. *Journal of Communication*. 48(4), 79-

Postwar trends in international communication research reveal that the three main paradigms — modernization, dependency, and postdependency — have theoretical and methodological limitations for analyzing the complexities of cultural practices in the contemporary era. The limitations arise from the narrow theoretical concern centered on the polarity between development and dependency, and the overemphasis of economic forces a the expense of cultural forces. In this essay I urge a focus on cultural dynamics to reflect rapidly changing conditions of integration and disintegration among diverse cultural forces in a global society. The concepts and methods in postmodern cultural studies can facilitate this theoretical shift. The Gramscian concept of hegemony allows us to explore the economic aspect of cultural production by media industries and the cultural-ideological aspect of audience readings within a single research framework.

Richards, William D. and Seary, Andrew J. 2000. Eigen Analysis of Networks. *Journal of Social Structure.* Volume 1, number 2.

We present an overview of eigen analysis methods and their applications to network analysis. We consider several network analysis programs and procedures (Correspondence Analysis, NEGOPY, CONCOR, CONVAR, Bonacich centrality) that are at their core eigendecomposition methods. We discuss the various matrix representations of networks used by these procedures and we give particular attention to a variety of centering and normalizing procedures that are carried out prior to the analysis. We compare three types of iterative procedures with the standard SVD in terms of pragmatic concerns and the results produced by each method. We show how the initial matrix representations and the adjustments made between iterations influence the results obtained. Finally, we show that the eigen perspective clearly highlights the similarities and differences between different network analysis procedures.

Rogers, Everett. 1999. Georg Simmel's Concept of the Stranger and Intercultural Communication Research. *International Communication Association*. 9(1), 58-74.

The stranger, defined by Georg Simmel as an individual who is a member of a system but who is not strongly attached to the system, influenced (1) such important concepts as a social distance, the marginal man, heterophily, and cosmopoliteness, (2) the value on objectivity in social science research, and (3) to a certain extent, the specialty field of intercultural communication. Here we explore these influences of Simmel's theory of human communication, especially his concept of the stranger, and highlight certain implications for the contemporary study of intercultural communication.

Sanders, Karin. 2000. Part-time and full-time employed, social cohesiveness, and short term absenteeism within an organization. Paper presented at the Annual Meeting of the American Sociological Association, 2000.

The Netherlands are quite unique in their relatively high number of part time employees. The question if there are differences in individual performance between part time and full time employees is, however, rarely the subject of research. And, when this question is asked, results are inconclusive. In research, the relationship between the number of working hours and the absentee rates is examined on the individual level, while neglecting the context of the employees. The most crucial question, however, is what will happen to the relationships between employees — that is the social cohesiveness — when more part time employees join a team? In this paper, the assumption is made that one of the most important neglected side effects of differences in the number of working hours concerns the stability of informal relationships between the employees within a organization. The research problem addressed in this paper is formulated as follows: *What is the relationship between the degree of similarity in the number of working hours of the employees and the tightness of the informal relationships within a team? How can this relationship be explained? Can the degree of social cohesiveness within a team explain the relationship between working hours and the short term absenteeism?* To examine these effects, network data on 62 employees in eight comparable teams within an organization were collected. The results show that there is a relationship between team composition and the informal relationships within a team, and that there is a relationship between informal relationship within a team and short-term absenteeism. Moreover, the more social cohesive a team, the norm concerning illegal absenteeism is a better predictor of the short term absenteeism.

Smith, L. R. (1999). Intercultural network theory: A cross-paradigmatic approach to acculturation. *International Journal of Inter-cultural Relations.* 23(4), 629-658.

The field of intercultural relations has devoted considerable attention to the idea of separate research paradigms. The distinctions between perspectives such as qualitative-quantitative, subjective-objective, functional-interpretive, etc., dominate theoretical and methodological writings. These distinctions are important for outlining the parameters of various research programs; however, many interesting issues in the cultural adjustment process deny the dichotomization of experience and require an approach that addresses a reality that is both reliable and present while at the same time situated and emergent. Recently our focus in the field has been trained on how we might bridge those distinct paradigms with a plausible intercultural theory. In the first portion of this article I outline three common research paradigms employed in intercultural relations. The social network perspective is then offered as a cross-paradigmatic research and theorizing approach. The conceptual history and relevant properties of social networks for intercultural research are described as part of the foundation for a theory of intercultural social networks that allows us to address the relational quality of intercultural interaction while acknowledging the stability of structural phenomena. I then propose seven assumptions and seven propositions comprising the beginning of a dynamic theory of intercultural social networks. Based upon the propositions put forward, future research avenues are suggested. I conclude that a socio-structural approach to acculturation, and the study of intercultural relations in general, is uniquely suited to capture and reconcile situated, emergent phenomena with reliable, present phenomena and increase our understanding of inter-cultural relations.

Sobrero, Maurizio and Schrader, Stephan. 1998. Structuring inter-firm relationships: a meta-analytic approach. (Special Issue: The Organizational Texture of Inter-firm Relations). *Organization Studies*. 19(4), 585-616.

Inter-firm relations have received considerable attention during recent years. Scholars have approached the analysis of interactions among separate actors by following different perspectives and using different levels of analysis. On the one hand, the strategic appropriateness and the economic advantages deriving from inter-organizational relations both at the firm and industry, and larger community level have been very thoroughly examined. On the other hand, studies on the role of social capital, trust and repetitive interactions have complemented the rational agent perspective of economic-based approaches.

Szmatka, Jacek, Skvoretz, John and Berger, Joseph. 1997. Cognitions, Emotions, and Identities. *Contemporary Sociology*. 28(6), 699-

Status, Network, and Structure reports on the state of theory-driven research programs on group processes. The authors provide an excellent overview of recent work within several active research traditions in sociological social psychology, particularly those on status characteristics/exception states and on social exchange. As well, they collectively offer on model for the development of a scientific sociology-encompassing formal theory, exploration of the implications of theoretical structures via mathematical analysis or computer simulation, and laboratory experiments as the preferred research method for testing theoretical models. The editors commend this as a means of encouraging the cumulation of sociological knowledge, providing cognitive criteria for problem choice, and identifying fundamental sociological phenomena.

Tambini, Damian. 1999. New medica and democracy. *New media & society*. 1(3), 305-329.

This article describes and evaluates civic networks in Europe and the USA. These are seen as attempts to use new media technology, particularly the internet, to improve participation in local democratic processes. Various aspects of democratic communication are examined, including information access, preference measurements, deliberation and group mobilization. A wide variety of city-based experiments are described, which have all faced problems of low take-up and problems of inequality of access. It is argued that new media will have a significant and positive impact upon the processes of democratic communication within the appropriate regulatory and economic context, particularly regarding access to communications technologies.

Van den Bulte, Christophe and Rudy K. Moenaert. 1998. The effects of R&D team co-location on communication patterns among R&D, marketing, and manufacturing. *Management Science*. 44(11), S1-S18.

Reducing the physical distance among R&D engineers and between R&D and marketing is widely believed to result in more frequent communication, and hence higher product development performance. However, the empirical evidence for the effect of co-location on communication frequency is problematic for two reasons: (I) the evidence often features either little contextual realism or doubtful internal validity, and (2) the analysis does not deal with the statistical problems typical of network data. Our study avoids the first problem by using sequential network data collected from a quasi-experiment at an industrial company that regrouped its R&D teams into a new facility. We avoid the second problem by using Wasserman and Iacobucci's (1988) method for the statistical analysis of sequential network data. Our results show that communication among R&D teams was enhanced after co-locating these teams. Surprisingly, communication frequency between R&D and marketing was not affected by the increased physical distance. This may suggest that business procedures accompanying the relocation prevented a widening gap between R&D and marketing. Alternatively, it may indicate that the effect of co-location depends on the content and medium of the communication flows.

Wank, David. 1999. Work, Organizations, and Markets. *Contemporary Sociology*. 28(4), 684-

The observation that firms function within elaborate systems of social relations will not surprise many sociologists. Indeed, the social embeddedness of individual and organizational behavior has become orthodox, particularly in economic sociology. Moreover, the idea that business in China was embedded in complex networks of social relations before reform, and that it continued to reflect webs of interpersonal and intercorporate ties during reform, will not surprise many readers. If either of these insights were the primary contribution of David Wank's *Commodifying Communism,* the book would rightfully go unnoticed. In reality, while Wank does make both of these observations, he does something much more important in the process. Specifically, his study documents, in considerable detail, the process by which a new set of intercorporate and business-government relations emerged in one city during China's economic transition. This is significant because, while it is one of the discipline's most central questions, the process by which social structure emerges has received little attention in sociology. Wank's main thesis is that the emergence of private enterprise in reforming socialist economies did not reduce the embeddedness of organization decision making, but rather it spawned the development of new forms of embeddedness.

Wilson, John and Musick, Marc. 1999. Attachment to Volunteering. *Sociological Forum*. 14(2), 243-

We propose that volunteers' attachment to their work is determined by the level of resources they bring to it, the rewards they derive from it, and the context in which the work is carried out. We test this theory using two waves of the Americans' Changing Lives panel study (1986-1989). The resources part of the theory is supported: the likelihood of remaining in the volunteer labor force across the two waves is greater for the more highly educated — those who report higher rates of formal and informal social interaction, and those who have children in the household — the last effect is stronger for women. Respondents reporting an increase in regular working hours across the two waves are more likely to cease volunteering. However, declining functional ability has no effect on attachment. The reward part of the theory is not consistently supported. Commitment to volunteer work in the first wave (measured by hours volunteered) predicts being a volunteer in the second, but enjoying the work has no effect, and being satisfied with the results of the work decreases attachment. Compared to a number of other work contexts, church-related volunteering in the first wave is the strongest predictor of being a volunteer in the second.

Wong, Lloyd L. 1997. Globalization and Transnational Migration: A Study of Recent Chinese Capitalist Migration from the Asian Pacific to Canada. *International Sociology*. 40(1), 329-351.

This article utilizes the perspective of transnationalism to explain Chinese capitalist migration from the Asian Pacific to Canada in the context of globalization. It is argued that transnationalism, and particularly the process of transmigration, provides a new and useful way of theorizing the international migration of capitalists. The focus is on Chinese migrants who enter Canada under the auspices of the Canadian Business Immigration Program as investors and entrepreneurs. The article presents two levels of analysis in theorizing this transnational migration. At the macro level, this migration is explained in the context of global capitalism and capital accumulation. Statistical data are presented illustrating the participation of Chinese from Hong Kong and Taiwan in the programme. These data include a trend analysis of the number of transmigrants and the amount of capital brought to Canada. At the micro level, some transnational social fields are examined utilizing survey research data from interviews with 284 Chinese business migrants who have set up a residence and a business in the city of Vancouver in Canada. More specifically, preliminary evidence of transnational social fields is presented and includes: family and personal social fields, ethnic social fields and business fields.