Sociology 410
Winter 2009
Wednesday 2:00-4:50 p.m.
Living Learning Center 123

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Social Networks

Course Description

The study of networks has become a topic of increasing interest across a range of academic disciplines, including sociology, anthropology, economics, physics, biology, mathematics, and computer science. With new tools provided by powerful but affordable computers and computing software, researchers have made impressive gains in modeling and theorizing the nature of networks as complex, large-scale, interactive systems. One of the results of this research has been the greater appreciation of the way that networks and their properties provide a bridge between formerly separate disciplines and areas of study. The aim of this course is to provide an introduction to and overview of this newly emerging science of networks. More specifically, the course will focus on: (1) the current state of knowledge and debate concerning the general properties of networks as complex, interactive systems; (2) an overview of methods and software most commonly used in the analysis of social networks; and (3) a more in-depth look at representative examples of substantive research in several key areas of social network analysis.

Course Readings

The two main texts for the course are:

- Albert-László Barabási, *Linked: How Everything is Connected to Everything Else and What It Means for Business, Science, and Everyday Life*
- John Scott, *Social Network Analysis: A Handbook* (2nd edition)

Both of these can be purchased at the UO Bookstore or from one of the online booksellers. Additional readings will be made available online.

Network Software

The software program *Ucinet 6* will be used to illustrate the basic methods of social network analysis — especially during weeks 5 and 6 of the term. Students can download a fully functional 30-day trial version of the software from Analytic Technologies (http://www.analytictech.com/ucinet6/ucinet.htm) and I encourage each of you to do so. If you download and install *Ucinet* at the beginning of February, you will have access to the program and can use it to do your own network analyses during the weeks that I will be demonstrating the program in class. The download includes several additional freeware programs (*NetDraw*, *Pajek*, and *Mage*), which you should install along with *Ucinet*, and a collection of datasets from some of the classic studies in social network analysis. All of these programs operate under Windows only. If you are interested, the trial version of *Ucinet* can be converted into a perpetual license for a fee of $40.

Course Website

The website for the course is located at http://uoregon.edu/~vburris/soc410. The website will provide links to additional readings, assignments, and various resources relevant to networks and network analysis.

Student Evaluation

Evaluation will be based on class participation, including one class in which you will be responsible for leading class discussion on a specific reading together with 2 or 3 fellow students (25 percent), three brief exams (scheduled for February 4, February 25, and March 11) covering the readings and lectures (45 percent), and a take-home final exam due by noon on Thursday, March 19 (30 percent). Students can also receive extra credit for doing one or more research assignments (maximum of 10 percent).

Class Schedule and Required Readings

Because this is an experimental course, the following schedule is somewhat tentative. Additional readings (required or recommended) may be added during the course of the term and others may be dropped. The final four weeks of the term are reserved for exploring specific topics in greater depth and may be modified depending upon the topics that prove to be of greatest interest to students in the class. Updated versions of the schedule will be posted on the course website.

Week 1 (January 7). Course Introduction (no readings).

Part 1. The New Science of Networks: An Interdisciplinary Overview

Week 2 (January 14). Graph theory, random networks, small worlds.

- Albert-László Barabási, *Linked*, chapters 1-5.

Week 3 (January 21). Scale-free networks, robustness, contagion.

- Albert-László Barabási, *Linked*, chapters 6-10.

Week 4 (January 28. Internet, biological networks, economic networks, complexity.

- Albert-László Barabási, *Linked*, chapters 11-15.

Part 2. Theory and Methods of Social Network Analysis

Week 5 (February 4). History of the field, network data, types of network ties, density.

- John Scott, *Social Network Analysis: A Handbook*, chapters 1-4

Week 6 (February 11). Class cancelled.

Week 7a (February 18). Centrality, subgroups, roles and positions.

- John Scott, *Social Network Analysis: A Handbook*, chapter 5-7.

Part 3. Topics in Social Network Analysis

Week 7b (February 18). Social capital and interpersonal networks.

- Mark Granovetter, "The Strength of Weak Ties." *American Journal of Sociology* 78: 1360-1380 (1973)
- Alejandro Portes, "Social Capital: It's Origins and Applications in Modern Sociology." *Annual Review of Sociology* 24: 1-24 (1998).
- Val Burris, "The Academic Caste System." *American Sociological Review* 69: 239-264 (2004). [Not required. Read if you wish. I will summarize.]

Week 8 (February 25). Corporate networks.

- Gerald F. Davis, Mina Yoo, and Wayne E. Baker, "The Small World of the American Corporate Elite, 1982-2001." *Strategic Organization* 1: 301-326 (2003).
- Val Burris, "Interlocking Directorates and Political Cohesion among Corporate Elites." *American Journal of Sociology* 111: 249-283 (2005). [Not required. Read if you wish. I will summarize.]
- Michael Nollert, "Transnational Corporate Ties: A Synopsis of Theories and Empirical Findings." *Journal of World-Systems Research* 11: 289-314 (2005).

Week 9 (March 4). Sexual networks.

- Peter S. Bearman, James Moody, and Katherine Stovel, "Chains of Affection: The Structure of Adolescent Romantic and Sexual Networks." *American Journal of Sociology* **110**: 44-91 (2004).
- Fredrik Liljeros et al., "The Web of Human Sexual Contacts." *Nature* 411: 907-908 (2001).
- J. J. Potterat et al., "Risk Network Structure in the Early Epidemic Phase of HIV Transmission in Colorado Springs." *Sexually Transmitted Infections* 78: i159-i163 (2002).

Week 10 (March 11). Online social networks.

- Barry Wellman and Milena Gulia, "Net Surfers Don't Ride Alone: Virtual Communities as Communities." In Peter Kollock and Marc Smith (eds.) *Communities in Cyberspace*. New York: Routledge (1999).
- Val Burris, Emery Smith, and Ann Strahm, "White Supremacist Networks on the Internet." *Sociological Focus* 33: 215-235 (2000).
- Danah Boyd and Nicole Ellison, "Social Network Sites: Definition, History, and Scholarship." *Journal of Computer-Mediated Communication* 13: 210-230 (2007).