MCMC 555
Topical Seminar: Social Network Analysis

Fall 2013
Thursday 3:15 - 5:45
Comm 1250

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Office Hours:	Tuesday 12:30-3:00	Wednesday 9:00-11:30
	By appointment	By appointment

1   Course Description

This course introduces social network analysis (SNA) as it pertains to the study of social and—especially—communication phenomenon. SNA is a large and growing field that stretches across such diverse disciplines as physics, computer science, anthropology, and sociology. This class focuses principally on the assumptions, theories, concepts, and methods that bind the field together. Although most of the reading comes from other disciplines, it is focused enough to provide the background necessar for applying SNA in any substantive area.

You should note that this is a demanding class, reflecting the need to introduce SNA *and* its application in social science. Yet while it is worthwhile noting the length of the syllabus upfront, you should be just as cognizant of the fact that this is but a small sample of work in the field. Towards that end, this class is only an introduction and your ability to master the material will depend on repeated application, empirical practice, and additional reading.

2   Course Philosophy

Network approaches assume that social phenomenon can only be understood in the context of the relationships between people, groups, organizations, institutions, and other units that produce the outcomes that interest social scientists. Individuals are assumed to be free to act, but not independent of others around them; institutions are not simple products of rules and individual choices; and, aggregate patterns are more complex than an average of their

constituent parts. This stands in stark contrast to the fundamental assumptions of most common theoretical frameworks in economics, psychology, and business, well as parts of sociology and anthropology. And though the assumption of *inter*dependence is not beyond question—it is, after all, an assumption—it is key to understanding the insights of SNA.

With this in mind, the course is structured into four units. We will begin with background reading on the evolution of SNA and the assumption of relational interdependence. The second unit will cover different considerations in gathering network data. Our interests here will focus squarely on conceptualization, measurement, and data-preparation for a class project involving original research The third section is strongly oriented on introducing the basic tools of SNA. Although the goal is to cover most of the principal methods used in SNA, I have endeavored to introduce substantive examples to help vitiate the material. Finally, we will cover the application of the theories and tools in a variety of communications contexts. While my choices here inevitably reflect my interests, the examples here also demonstrate application to many topics in communications.

3 Course Requirements and Graded Evaluation

3.1 Class Participation

Attendance and participation are mandatory for this course. It is imperative that you come prepared to discuss all course material each week. To aid in your preparation, I have identified some of the important themes and questions for each week on the syllabus. You would be well served to think about those issues and others before you enter class each week. You should also come prepared to answer the following questions for each of the assigned readings:

1. What is the main contribution of the reading to scholarly knowledge?

2. What theoretical tradition is the reading working within or in contrast to?

3. What hypotheses are offered for empirical analysis?

4. What are the data and measures used in the paper? What methodological techniques are used to analyze the data? Are the data and methods appropriate for evaluating the theory and hypothesis?

5. What are the main findings?

6. What are the implications of the theory and results for our understanding of communications?

7. What are your criticisms of the research?

Active participation accounts for 200 points towards your final grade. These points are to be based on my qualitative assessment of how actively you engage the material and class, the quality of that engagement, and your ability to forceably *but* respectfully engage classmates.

3.2 Weekly Talking Points

You are required to submit "talking points" **ten times** over the course of the semester. Each time you make a submission, you must provide **questions or comments about two of that week's readings.** Talking points should be posted on the course D2L page by no later than 9:00 AM on the day we will discuss the material. I will use your talking points to guide the seminar discussions, so they should be the most interesting questions or arguments that you have identified based on the week's readings. Each comment/question should be in the form of a short paragraph, specifically refer to the reading(s) in question, and should be no longer than 150 words. Late talking points will never be accepted. Each of your submissions is worth 20 points (half for completion, half for quality/insight), for a total for 200 points towards your final grade.

3.3 Class Project

The entire class will participate in a *original data collection and analysis effort.* The focus of the project will be on explaining faculty collaboration and friendship networks in the College of Mass Communication and Media Arts. More explicitly, we will examine three types of faculty ties—have you written a paper with this person? Have you sought advice about a paper from this person? Have you attended a social gathering with this person in the last month? We will focus on these links and location so that students better understand both MCMA and the more general process of academic collaboration. Collectively, students will need to fulfill the following tasks: build hypotheses based on both individual and structural theories; learn about and situate their hypotheses in existing research on scholarly collaboration and friendship; prepare an original measurement instrument that is administered to MCMA faculty; use the data to analyze their hypotheses; and, finally to produce a report on MCMA friendship and collaboration networks. At the end of this project, all students will assess the contribution of their fellow collaborators for the purpose of weighting the final grades. I will schedule an open forum during which we present your findings to the members of the Faculty and students who are interested.

3.4 Assignment Schedule

Participation	200 points	Weekly
Talking Points	200 points	Weekly
Class Project	500 points	December 5th
Presentation of Results	100 points	TBD

3.5 Grading Scale

1000 to 900	A
899 to 800	B
799 to 700	C
699 to 600	D
Below 600	F

4 Class Policies

4.1 Absences

You are expected to attend every lecture and discussion section. If you arrive after attendance is taken, you will be considered absent for the day. If you must miss class for some reason, you can receive an excused absence by contacting me **in advance**. I reserve the right to see documentation for your absence or to decide what constitutes a reasonable excuse. If you must miss class, you are responsible for finding out what you missed.

4.2 Missed Assignments

All assignments are due at the start of class on the date assigned unless the instruct indicates otherwise. Any assignment not turned in on time will lose half a letter grade for each day it is late. Any assignment more than 48 hours late will not be accepted. See "Problems and Emergencies" for the only exceptions to this policy.

4.3 Incompletes

There will be no incompletes given in this class except in cases of emergency or where university policy applies to the contrary.

4.4 Cheating and Academic Misconduct

Any student engaging in academic misconduct will receive an F in my course and be reported to the Dean. I will also recommend your expulsion from the graduate program. I suggest that, as a start, you use the following common sense criteria:

- Group work not approved by the instructor constitutes academic fraud.

- Representing anyone elses written work as your own is plagiarism.

- Representing anyone elses ideas as your own is academic misconduct.

- Using unauthorized resources on exams or in papers is cheating.

- Turning in work from other classes without permission is academic misconduct.

If you have any questions about what constitutes cheating or academic misconduct, you should examine the university policy and/or ask the instructor prior to turning in any assignment.

4.5   Problems and Emergencies

If a problem or emergency arises that prevents you from attending an exam, turning in a paper, or coming to class, you should contact Professor McClurg as soon as possible. The best way to contact me is via email (mcclurg@siu.edu). If you do not hear back from me within a reasonable amount of time you may call me. Students contacting me **prior** to missing an assignment will receive greater leniency. Examples of excuses that do **not** qualify as problems and emergencies include, but are not limited to, the following: oversleeping, taking too much medication, being incarcerated, or having a cold. You are welcome to clarify what I consider to be an acceptable excuse to me at any point in the semester.

4.6   Grading Policies and Standards

Graded material is returned as promptly as possible. When students receive an exam or assignment back and are dissatisfied with their grade, they must wait at least two days before asking for a review. To request such a review, the student must submit a single-spaced, one paragraph note explaining why the original grade is inappropriate. All assignments submitted for review can be graded up or down by the Professor.

5   Reading Assignments

We will significant parts of the following books, so you should obtain them as soon as possible. If you have any trouble obtaining them, notify me immediately.

- Knoke, David and Song Yang. 2008. *Social Network Analysis.* Second Edition. Thousand Oaks, CA: Sage Press. (Referred to below as *K&Y*.)

- Wasserman, Stanley and Katherine Faust. 1994. *Social Network Analysis: Methods and Applications.* Cambridge, UK: Cambridge University Press. (Referred to below as *W&F*.)

6 Course Schedule and Reading Assignments

6.1 Introduction to Social Networks

6.1.1 Week 1, August 22. Course Introduction

6.1.2 Week 2, August 29. History of Social Network Analysis

Although social network analysis is an interdisciplinary field today, its roots run deepest in sociology and anthropology. This week, we will example the principal milestones in SNA. What were the main developments that transformed the field? Were they mainly theoretical or methodological? How has this contributed to the field?

Required Reading

- Lazer, D. *2012.* "Networks in Political Science: Back to the Future." *PS: Politics and Political Science.* 41(1):61-8

- Scott, J.D. 2000. "Chapter 2: The Development of Social Network Analysis." *Social Network Analysis: A Handbook.* 2nd Edition. Newbury Park, CA: Sage Press.

- W&F, Chapter 1

Recommended Reading

- Bonacich, P. 2004. "The Invasion of the Physicists." *Social Networks.* 26(3):285-88.

- Laumann, E.O.. 2006. "A 45-year Retrospective on Doing Networks." *Connections.* 27(1): 65-90.

- Freeman, L.C.. 2004. *The Development of Social Network Analysis: A Study in the Sociology of Science.* Vancouver, BC, Canada: Empirical Press.

6.1.3 Week 3, September 5. Foundations of Social Network Analysis

The discussion this week focuses on the epistimelogical foundations of social network analysis—the notion that relations between units are important for understanding the social outcomes. What does this mean and how is different from "methodological individualism?" What is the relevance of networks for thinking about micro *and* macro outcomes? What are reasons for using this type of approach? What are the reasons against it? What methodological and theoretical challenges derive from a relational approach?

Required Reading

- Borgatti, S.P., A. Mehra, D.J. Brass and G. Labianca. 2009. "Network Analysis in the Social Science." *Science.* 323:892-95.

- Butts, C. 2009. "Revisiting the Foundations of Network Analysis." *Science.* 325:414-16.

- Huckfedlt, R. 2009. "Interdependence, Density Dependence, and Networks in Politics." *American Politics Research.* 37:921-50.

- Emirbayer, M. 1997. "A Manifesto for a Relational Sociology." *American Journal of Sociology.* 103(2):281-317.

- K&Y, Chapters 1-2.

Recommended Reading

- Simmel, G. 1955. "The Web of Group-Affiliations." In Kurt H. Wolff and Reinhard Bendix (trans.). *Conflict and the Web of Group-Affiliations.* New York: The Free Press.

6.1.4   Week 4, September 12. Theoretical Ideas in Social Network Analysis

Required Reading

- Bearman, P. S., J. Moody., and K. Stovel. 2004. "Chains of Affection: The Structure of Adolescent Romantic and Sexual Networks." *American Journal of Sociology.* 110(1):44-91.

- Burt, R. 1987. "Social Contagion and Innovation: Cohesion Versus Structural Equalivalence." *American Journal of Sociology.* 92:1287-1315.

- Coleman, J., E. Katz, and H. Menzel. 1957. "The Diffusion of Innovation Among Physicians." *Sociometry.* 20:253-70.

- Christakis, N.A. and J.H. Fowler. 2007. "The Spread of Obesity in a Large Social Network over 32 Years." *The New England Journal of Medicine.* 357: 370-379.

- Siegel, D.A. 2009. "Social Networks and Collective Action." *American Journal of Political Science.* 53(1):122-38.

Recommended Reading

- Burt, R. 1995. *Structural Holes: The Social Structure of Competition.* Cambridge, MA: Harvard University Press.

- Friedkin, N. 1998. *A Structural Theory of Social Influence.* Boston, MA: Cambridge University Press.

- Jackson, M. 2010. *Social and Economic Networks.* Princeton, NJ: Princeton University Press.

- Martin, John Levi. 2009. *Social Structures.* Princeton, NJ: Princeton University Press.

6.2 Social Network Data

6.2.1 Week 5, September 19. Identifying a Social Network–Boundaries

Required Reading

- K&Y, Chapter 3.

- Laumann, E.O, P.V. Marsden, and D. Prensky. 1989. "The Boundary Specification Problem in Network Analysis." L.C. Freeman, D.R. White, and A.K. Romney, Eds. *Research Methods in Social Network Analysis.* Fairfax, VA: George Mason University Press. PP. 61-87.

- McClurg, S.D. "Porous Networks and Overlapping Contexts: Methodoloogical Challenges in the Stud of Social Communication and Political Behavior."

- W&F, Chapter 2.

6.2.2 Week 6, September 26. Identifying a Social Network–Links

Required Reading

- Bearman, P.S. and P. Parigi. 2004. "Cloning Headless Frogs and other Important Matters: Conversation Topics and Network Structures." *Social Forces.* 83(2):535-57.

- Breiger, R.L. 2005. "Introduction to Special Issue: Ethical Dilemmas in Social Networks Research." *Social Networks.* 27(2):89-93.

- Klofstad, C., S.D. McClurg, and M. Rolfe. 2009. "Measurement of Political Discussion Networks: A Comparison of Two 'Name Generator' Procedures." *Public Opinion Quarterly.* 73(3):462-82.

- Kossinets, Gueorgi. 2006. "Effects of Missing Data in Social Networks." *Social Networks.* 28(3): 247-268.

- Sokhey, A.E. and P.A. Djupe. 2013. "Name Generation in Interpersonal Political Network Data: Results from a Series of Experiments." *Social Networks.*

- Marsden, P. V. 1990. "Network Data and Measurement." *Annual Review of Sociology.* 16:435-463.

6.2.3 Week 7, October 3. Practical–Designing a Social Network Survey

One theme that emerges in our readings is that SNA has different data requirements than "normal" approaches. It also has special requirements to consider with it comes to ethics, measurement, sampling, and external and internal validity. What are the special challenges in gathering network data? What impact to they have on how we evaluate network research?

What are the common solutions? What's missing from the list of things we consider? How would you approach these problems? Do they make SNA less believable? Why or why not?
Required Reading

- Klofstad, C.A., A.E. Sokhey and S.D. McClurg. 2013. "Disagreeing about Disagreement: How Conflict in Social Networks Affects Political Behavior." *American Journal of Political Science.* 57(1):120-34.

- Park, H.W. 2003. "Hyperlink Network Analysis: A New Method for the Study of Social Structure on the Web." *Connections.* 25(1):49-61.

6.2.4 Week 8, October 10. Practical–Implementing a Social Network Survey

6.2.5 Week 9, October 17. No Class – Fall Break

Enjoy the break (but you probably should still be working)!

6.3 Social Network Analysis: An Introduction

6.3.1 Week 10, October 24. Graph Theory and Matrix Algebra

This week examines the basic concepts of SNA methods and introduced the idea of graph theory. We will also get an overview of the upcoming weeks and discuss how they fit together into a single framework. This week will be very technical and will therefore be *lecture-oriented*, so talking points this week should focus on explaining what is unclear in the readings.
Required Reading

- K&Y, 4.1 and 4.2.

- W&F, Chapters 3 and 4.

6.3.2 Week 11, October 31. Relationships, Centrality, and Properties

In this session we will examine the basic local properties of networks and consider how they can be used for thinking about about substantive problems. **You should read the methodological material first and read the applied pieces second.** Issues to consider are what makes a "relationship" between units interesting, how do we examine properties of actors based on their relations, and why this can be relevant to substantive problems
Required Reading

- Fowler, James. 2006. "Connecting the Congress: A Study of Co-sponsorship Networks." *Political Analysis.* 14(4):456-487.

- Grannovetter, M. 1973. "The Strength of Weak Ties." *American Journal of Sociology.* 78:1360-80.

- K&Y, 4.3 and 4.4

- W&F, Chapters 5, 9, and 12

Recommended Reading

- Bonacich, Phillip. 1987. "Power and Centrality: A Family of Measures." *American Journal of Sociology.* 92(5):215-239.

- Borgatti, S.P. 2005. "Centrality and Network Flow." *Social Networks.* 27:55-71.

- Friedkin, Noah. 1991. "Theoretical Foundations for Centrality Measures." *American Journal of Sociology.* 96(6):1478-1504.

6.3.3 Week 12, November 7. Clusters, Groups, and Communities

In addition to placing individual units into the broader structure, we're also considered about aggregate patterns of the structure itself. Yet since most networks are relatively connected (every node can be reached by other nodes by *some* path), this can be challenging. Towards that end, we will consider different ways of summarizing grouping and clustering. What are the strengths and advantages of the different approaches? How can they be used in substantive analyses?
Required Reading

- Davis, J.D. 1963. "Structural Balance, Mechanical Solidarity, and Interpersonal Relations." *American Journal of Sociology.* 68:444-62.

- K&Y 4.4–4.8

- Moody, J. 2002. "Peer Influence Groups: Identify Dense Clusters in Large Networks." *Social Networks.* 23:261-83.

- W&F, Chapters 6, 7, and 10

- Zhang, Y., A.J. Friend, A.L. Traud, M.A. Porter, J.H. Fowler, and P.J. Mucha. "Community Structure in Congressional Cospononship Networks." *Physica A.* 387(7):1705-1712.

Recommending Reading

- Feld, S. 1991. "Why Your Friends Have More Friends than You Do." *American Journal of Sociology.* 96:1464-77.

- Freeman, L.C. 1992. "The Sociological Concept of 'Group'." *American Journal of Sociology.* 98:152-66.

- Newman, M. 2006. "Modularity and Community Structure in Networks." *Proceedings of the National Academy of Science.* 103(23):8577-8582.

6.4 Applications

6.4.1 Week 13, November 14. Interpersonal Communication

Required Reading

- Eveland, W.P., Jr., M.J. Hutchens, and A.C. Morey. 2013. "Political Network Size and Its Antecedents and Consequences." *Political Communication.* 30:371-94.

- Huckfeldt, R. and J. Mendez. 2008. "Moths, Flames, and Political Engagement: Managing Disagreement within Communication Networks." *The Journal of Politics.* 70:83-96.

- Kim, E., D. Scheufele, and J.Y. Han. 2011. "Structure or Predisposition? Exploring the Interaction Effect of Discussion Orientation and Discussion Heterogeneity on Political Participation." *Mass Communication and Society.* 14(4):502-26.

- Klandermans, B. and D. Oegema. 1987. "Potentials, Networks, Motivations, and Potentials: Steps Toward Participation in Social Movements." *American Sociological Review.* 52:519-531.

- McLeod, J.M. and S.R. Chaffee. 1973. "Interpersonal Approaches to Communication Research." *American Behavioral Scientist.* 16:469-99.

- Yang, J. and G. Stone. 2003. "The Powerful Role of Interpersonal Communication in Agenda Setting." *Mass Communication and Society.'* 6(1):57-74.

6.4.2 Week 14, November 21. Organizational and Institutional Communication

Required Reading

- Anderson C.W. 2010. "Journalistic Networks and the Diffusion of Local News: The Brief, Happy News life of the 'Francisville Four'." *Political Communication.* 27:289-309l

- Atouba, Y. and M. Shumate. 2010. "Interorganizational Networking Patterns Among Development Organizations." *Journal of Communication.* 60:293-317.

- Heinz, J.P., E.O. Laumann, R.H. Salisbury, and R.L. Nelson. 1990. "Inner Circles or Hollow Cores? Elite Networks in National Policy Systems." *The Journal of Politics.* 52(2):356-390.

- Henry, A., M. Lubell, and M. McCoy. 2010. "Belief Systems and Social Capital as Drivers of Policy Network Structure: The Case of California Regional Planning." *The Journal of Public Administration Research and Theory.*

- Kim, K. and G.A. Barnett. 1996. "The Determinants of International News Flow: A Network Analysis." *Communications Research.* 23(3):323-52.

- Montoya, Celeste. 2008. "The European Union, Capacity Building, and Transnational Networks: Combating Violence against Women through the Daphne Program." *International Organization.* 62:359-372.

- Whitbred, R., F. Fonti, S. Steglich, and N. Contractor. 2011. "From Microactions to Macrostructures and Back: A Structurational Approach to the Evolution of Organizational Networks." *Human Communication Research.* 37:404-33.

6.4.3   Week 15, November 28. No Class – Thanksgiving Break

6.4.4   Week 16, December 5. On-line Communication

Required Reading

- Cho, H. and J. Lee. 2008. "Collaborative Information Seeking in Interculturual Computer-Mediated Communications Groups: Testing the Influence of Social Context Using Social Network Analysis." *Communication Research.* 35(4):548-73.

- Festl, R. and T. Quandt. 2013. "Social Relations and Cyberbullying: The Influence of Individual and Structural Attibutes on Vicimization and Perpetration via the Internet."*Human Communication Research.* 39:101-26.

- Lovejoy, K. and G.D., Saxton. 2012. "Information, Community, and Action: How Nonprofit Organizations Use Social Media." *Journal of Computer- Mediated Communication.* 17(337-53.

- Himelboim, I., McCreery, S., and Smith, M. 2013. "Birds of a feather tweet together: Integrating network and content analyses to examine cross-ideology exposure on Twitter." *Journal of Computer-Mediated Communication.* 18(2): 40-60.

- Himelboim, I.. 2008. "Reply Distribution in Online Discussions: A Comparative Network Analysis of Political and Health Newsgroups." *Journal of Computer-Mediated Communication.* 14:156-77.

- Hyun, K.D. 2012. "Americanization of Web-Based Political Communication? A Comparative Analysis of Political Blogosperes in the United States, United Kingdom, and Germany." *Journalism & Mass Communication Quarterly.* 89(3):397-413.
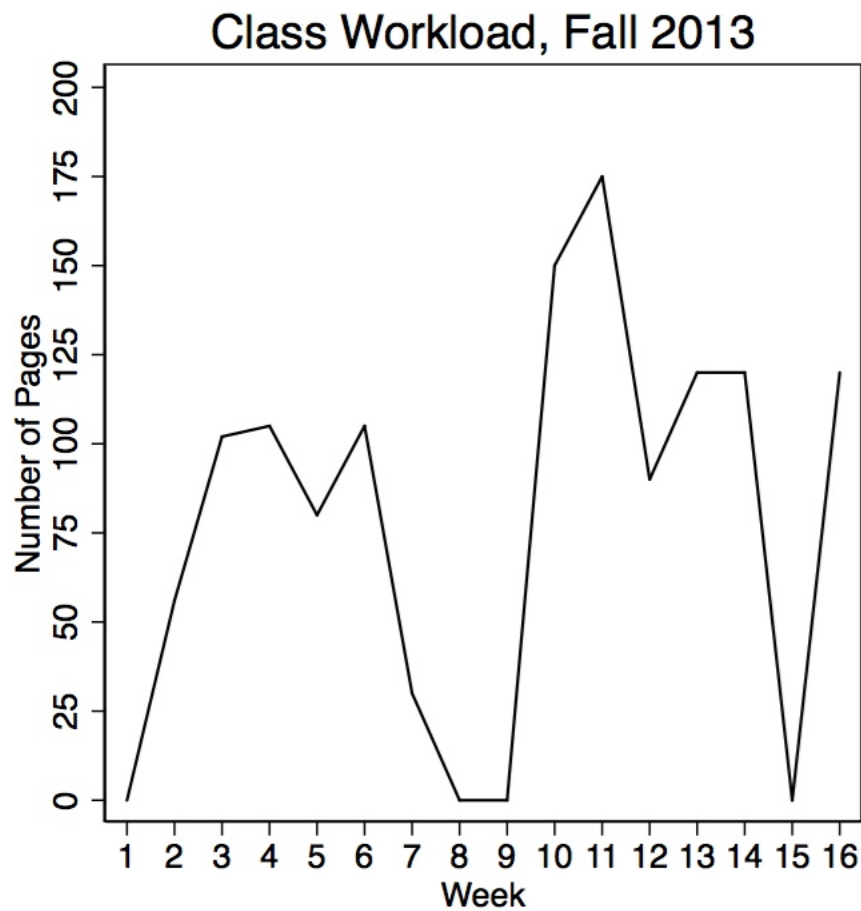
Figure 1: This graph shows roughly the number of assigned pages for each class week. Plan accordingly, especially since much of this technical reading.