Introduction to Social Network Analysis for Anthropologists

Mondays and Wednesdays 1:30 – 2:50PM, Room 40-41J

Instructor: Madeline Brown
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Office Hours: Mondays: 12:00 – 1:30; Spatial Lab 50-52K

Course description:
What are social networks and how do they help explain other patterns we observe in the world around us? Although the rise of social media and big data has made social network analysis (SNA) a hot topic in recent years, scholars in anthropology and sociology have been analyzing social networks and interaction patterns - and related debates over structure and agency - since the early days of these disciplines. We'll cover real world examples of social, political, and economic networks and also analyze relationships in film/literature to think about how individual interactions influence broader social structures and dynamics.

This course will introduce undergraduates at all levels to the theory and methods used in social network analysis. Coursework will involve problem sets, student presentations, and weekly participation in hands-on activities. The main output of the course however will be a student-designed project analyzing social relationships in a community (virtual, historical, or physical-world) of interest.

There are no prerequisites, but familiarity with R would be helpful. Lectures on R will be provided early in the course, so if you're interested in thinking creatively about social relationships, don't let your lack of programming experience be a deterrent!

Course requirements:
This course meets twice-weekly throughout the quarter. After the second week, class meetings will be generally divided into two types. The first class meeting each week will be a lecture about theory or methods in SNA. The second meeting will be broken into two parts: 1) reviewing problem sets and 2) cooperative workshop sessions for students to work on assignments and personal research projects.

Course materials:
Readings will be a mix of journal articles and book excerpts. One book is required for the course: *Scott, J. 2000. Social Network Analysis: A Handbook.* 3rd ed. London: Sage. You will also be required to download R, an open source statistical computing software.

Assignments and grading:

• Problem sets (4)	40%	*due Wednesdays in weeks 2, 4-6*
• Film/text analysis and presentation	15%	*due Feb 25*
• Final project prospectus	5%	*due Jan 30*
• Final project methods and lit review	10%	*due Feb 22*
• Final project presentation	10%	*on March 12-15*
• Final research report	20%	*due March 22*

Late assignments and email policy:
Readings are to be completed *before* the start of class on Monday. Assignments are due by email before class on the day specified on the syllabus. Problem sets must be turned on in before class, as we will review them together during class. No late problem sets will be accepted. Non-problem set written assignments must similarly be turned in before class on the day they are due. After the deadline, assignment grades will be reduced 10% for each late day. You will be given one "freebie" extension to turn a non-time-sensitive assignment in late, but after that no extensions will be granted. Final report due date and in-class presentations cannot be extended. Instructor can be reached by email M-F until 6pm.

Course Schedule (subject to change):

Week 1	**Why study social relationships and what do networks have to do with it?**	
Readings: Borgatti et al. (2009); Radcliffe-Brown (1940); Scott ch. 1-2; Hinde (1976)		
	Mon Jan 9	Course overview: introduction to thinking relationally *Assignment:* Download R and install igraph, ggplot2, and statnet packages
	Wed Jan 11	Sociological foundations of SNA Introduction to R: variables, data management and functions *Assignment:* Complete R online tutorial and Problem Set 1
Week 2	**Graphs, nodes, and edges: visualizing social relationships**	
Readings: Scott ch. 3-4, Evans-Pritchard (1929); Butts (2009); Hage (1979)		
	Mon Jan 16	*No class*: Martin Luther King, Jr., Day *Assignment:* Keep working on getting familiar with R, think about your research project prospectus
	Wed Jan 18	Network visualization, graph theory, and more R In-class review of Problem Set 1 *Assignment:* Problem Set 2 *Due:* R online tutorial and Problem Set 1
Week 3	**Network sampling strategies and data quality**	
Readings: Granovetter (1976); Kadushin (2005); Bernard et al. (1984); Marsden (2016)		
	Mon Jan 23	Network sampling strategies and data quality *Assignment:* Problem Set 3
	Wed Jan 25	Advanced topics in R Workshop time for Problem Sets
Week 4	**Social structure: communities, cliques, and social cohesion**	
Readings: Scott ch. 5-6, Girvan & Newman (2002); Zachary (1977); Bott (1955); Alba & Moore 1978		
	Mon Jan 30	Analysis of network level properties *Due:* Research project prospectus
	Wed Feb 1	In-class review of Problem Set 2 Meetings with students about project prospectus' *Due:* Problem Set 2
Week 5	**Centrality, social positions, and power**	
Readings: Scott ch. 7-8; Granovetter (1973), Burt (1992); Lin (2000)		
	Mon Feb 6	Centrality measures and social capital *Assignment:* Problem Set 4: Egocentric networks
	Wed Feb 8	In-class review of Problem Set 3 Workshop time for egocentric network problem set *Due:* Problem Set 3
Week 6	**Egocentric networks**	

Readings: Bidart & Charbonneau 2014, Campbell & Lee 1991; Marsden 1993; Wellman et al. 1997		
	Mon Feb 13	Analysis from the individual's perspective *Assignment:* Film or literature network analysis
	Wed Feb 15	Social relationships in film and literature In-class review of Problem Set 4 Workshop time for film or literature network analysis *Due:* Problem Set 4
Week 7	**Flows in networks: resources, information, disease**	
Readings: Borgatti (2005); Nolin 2010; Bearman et al. 2004; Wellman and Wortley (1990)		
	Mon Feb 20	*No class*: Presidents' Day
	Wed Feb 22	Flows in networks: resources, information, disease Workshop time for film or literature network analysis *Due:* Research project methods and literature review
Week 8	**Multi-modal and multiplex networks**	
Readings: Papachristos and Smith (2014); McPherson et al. (2001); Milward and Provan (1998); Baggio et al. (2016)		
	Mon Feb 27	Analysis of multimodal and multiplex networks Presentations on film analysis *Due:* Film or literature network analysis
	Wed Mar 1	Workshop time for final project Movie: *Connected: The Power of Six Degrees*
Week 9	**Networks and real world problems**	
Readings: Prell and Hubacek (2009); Crona and Bodin (2006); Cinner and Bodin (2010); Bodin and Crona (2009)		
	Mon Mar 6	Collective action and resource management dilemmas
	Wed Mar 8	Guest lecturer: Elspeth Ready – *Food security and country-food sharing in the Canadian Arctic* Workshop time for final project
Week 10	**Student project presentations**	
	Mon Mar 13	Wrapping up Student final project presentations
	Wed Mar 15	Student presentations
	Wed Mar 22	Final report due: 5pm

Problem Sets:

1) Basic data manipulation and operations in R
2) Network visualization in R
3) Community detection and change over time: Sampson's Monks
4) Egocentric networks

Course resources:

Badenoch, Nathan Augustus. 2006. Social Networks in Natural Resource Governance in a Multi-Ethnic Watershed of Northern Thailand. Graduate School of Asian and African Area Studies Kyoto University.

Bodin, Ö., & Prell, C. (2011). Social networks and natural resource management : uncovering the social fabric of environmental governance. Cambridge: Cambridge University Press.

Bodin, Ö., Crona, B., & Ernstson, H. (2006). Social Networks in Natural Resource Management: What Is There to Learn from a Structural Perspective? *Ecology and Society 11(2):*, *11*(2), r2 [online].

Bodin, Ö., & Crona, B. I. (2009). The role of social networks in natural resource governance: What relational patterns make a difference? *Global Environmental Change*, *19*, 366–374. doi:10.1016/j.gloenvcha.2009.05.002

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Bernard, H., Killworth, P., Kronenfeld, D., and Sailer, L. (1984). The problem of informant accuracy: The validity of retrospective data. Annual Review of Anthropology, 13:495–517.

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Barnes, J. and F. Harary (1983). Graph theory in network analysis. Social Networks 5(2), 235–244.

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Bernard, H. R., P. Killworth, D. Kronenfeld, and L. Sailer (1984). The Problem of Informant Accuracy: The Validity of Retrospective Data. Annual Review of Anthropology 13, 495–517.

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Bidart, C. and J. Charbonneau (2011). How to Generate Personal Networks: Issues and Tools for a Sociological Perspective. Field Methods 23(3), 266–286.

Borgatti, S. and Halgin, D. (2011). On network theory. Organization Science, 22(5):1168–1181.

Borgatti, S. P. (2005). Centrality and network flow. Social Networks, 27:55–71.

Borgatti, S. P., Mehra, A., Brass, D. J., & Labianca, G. (2009). Network Analysis in the Social Sciences. *Science*, *323*, 892–896.

Bott, E. (1955). Urban families: Conjugal roles and social networks. Human Relations, 8:4.

Bourdieu, P. (1986). The forms of capital. In J. G. Richardson (Ed.), *Educational sociology—Addresses, essays, lectures* (pp. 241–258). Westport, Connecticut: Greenwood Press.

Burt, R. S. (1992). The social structure of competition. In *Networks and organizations: Structure, form, and action* (pp. 57–91).

Butts, C. T. (2009). Revisiting the foundations of network analysis. *Science*, *325*, 414–6. doi:10.1126/science.1171022

Campbell, K. and Lee, B. (1991). Name generators in surveys of personal networks. Social Networks, 13(3):203–221.

Coleman, J. (1988). Social capital in the creation of human capital. American Journal of Sociology, 94:S95–S120.

Cinner, J. E., & Bodin, O. (2010). Livelihood diversification in tropical coastal communities: a network-based approach to analyzing "livelihood landscapes". *PloS one*, *5*(8), e11999. doi:10.1371/journal.pone.0011999

Crona, B., & Bodin, Ö. (2006). What You Know is Who You Know? Communication Patterns Among Resource Users as a Prerequisite for Co-management. *Ecology and Society 11(2):*, *11*(2), 7 [online].
Crona, B., & Hubacek, K. (2010). The Right Connections : How do Social Networks Lubricate the Machinery of Natural Resource Governance ?, *15*(4).
Evans-Pritchard, E. E. (1929). The study of kinship in primitive societies. Man, 29:190–194.
Gile, K. J. and Handcock, M. S. (2010). Respondent-driven sampling: An assessment of current methodology. Sociological Methodology, 40:285–327.
Girvan, M. and Newman, M. (2002). Community structure in social and biological networks. Proceedings of the National Academy of Sciences, 99:7821–7826.
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Hinde, R. A. (1976). Interactions, relationships and social structure. Man, 11:1–17.
Kadushin, C. (2005). Who benefits from network analysis? Ethics of social networks research. Social Networks, 27(2):19–46.
Matous, P. and Ozawa, K. (2010). Measuring social capital in a Philippine slum. Field Methods, 22(2):133–153.
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Nolin, D. (2010). Food-Sharing Networks in Lamalera, Indonesia Reciprocity, Kinship, and Distance. Human Nature 21(3), 243–268.
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