

Social Network Analysis in Cultural Anthropology ANG5420

Lectures by: Dr. Jeffrey C. Johnson and Dr. Christopher McCarty
and Mr. David Dillon

Course instructor: David Dillon
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Office Hours – TBA each term Online
course

Description and Objectives

Social network analysis (SNA) is the study of the patterns of relations between actors (usually people). SNA is a way to operationalize social context in detail. In addition to providing data to test models that use social network measures to predict outcomes, network visualization provides a unique way to interact with respondents about that social context. Participants will learn about whole network analysis (relations within groups) and personal network analysis (relations surrounding individuals). This is a basic introductory hands-on course, employing examples germane to anthropological research. Whole networks will be analyzed using UCINET and NetDraw while personal networks will be collected and analyzed using EgoNet and Vennmaker. By the end of the course, participants should understand how to:

- Collect whole and personal network data and input it into social network analysis packages
- Transform data for analysis using graph-based and statistics-based social network measures
- Visualize network data with different algorithms
- Apply node and group level social network measures
- Build network models
- Choose among social network designs based on research goals
- Apply social network theory to example data sets

Required Text:

Stephen Borgatti, Martin Everett and Jeffrey Johnson 2013 *Analyzing Social Networks* First Edition. Sage

Software:

UCINET, free 60-day trial available at <http://www.analytictech.com/downloaduc6.htm>

Egonet, freely available at <http://sourceforge.net/projects/egonet/>

Vennmaker, free 30-day trial available at <http://www.vennmaker.com/en/download/>

Tutorial

A UCINET tutorial by Bob Hanneman & Mark Riddle is available at <http://faculty.ucr.edu/~hanneman/nettext/>

Supplemental Textbooks

These textbooks are used in many introductory social network analysis courses.

John Scott 2000 *Network Analysis: A Handbook*. Second Edition. Newbury Park CA: Sage.

Thomas Valente 2010 *Social Networks and Health: Models, Methods and Applications*, First Edition. Oxford University Press

Charles Kadushin 2011 *Understanding Social Networks: Theories, Concepts and Findings*, First Edition. Oxford University Press.

Stanley Wasserman and Katherine Faust 1994 *Social Network Analysis: Methods and Applications*. First Edition. Cambridge University Press.

Course Requirements and Grading

A (90-100), A- (87-89), B+ (84-86), B (80- 83), B- (77-79), C+ (74-77), C (70-73), C- (67-69), D+ (64-66), D (60-63), D- (57-59), E (<57).

1. *Class participation* (10%). Your participation grade is based on your postings of the discussion topics for each week. Your postings should focus on solutions you developed to confront the problems you faced with exercises and assignments. Your posting should be BRIEF and, if relevant, contain a screen shots showing relevant error messages and the path you selected to solve it. Each week's posting is 2 points.
2. *Assignments* (60%). Students are required to complete one assignment per week based on weekly themes. Each assignment is composed of several sub-sections (HW assignments) related to each of the main concepts covered during the week. Each weekly assignment is worth 12 points.
3. *Final presentation* (30%). Your final presentation is a synthesis of your earlier assignments plus and additional analysis showing the integration of several types of datasets processed during the course Your assignment should demonstrate your proficiency in responding to different questions and ability to use the two main software packages proficiently.

For further information on UF's Grading Policy, see:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>
<http://www.isis.ufl.edu/minusgrades.html>

Policy on Late Assignments and Make-up work

Assignments must be complete by due date. Late assignments will lose one third-grade for each day late, unless excused for university-approved absences with documentation. Make-up work allowed only for excused absences

Academic Honor Code

Unless it is specifically connected to assigned collaborative work, all work should be individual. Evidence of collusion (working with someone not connected to the class or assignment), plagiarism (use of someone else's published or unpublished words or design without acknowledgment) or multiple submissions (submitting the same paper in different courses) will lead to the Department's and the University's procedures for dealing with academic dishonesty. All students are expected to honor their commitment to the university's honor code. See:

<http://www.dso.ufl.edu/sccr/honorcodes/honorcode.php>

Accommodation for Students with Disabilities

If you need special arrangements for notes, exams or homework, we will do all we can to help. Students requesting classroom accommodation must first register with the Disability Resource Center (<http://www.dso.ufl.edu/drc/>). The DRC will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation. Please make any requests by the second week of class. Contact the Disability Resources Center (<http://www.dso.ufl.edu/drc/>) for information about available resources for students with disabilities.

UF Counseling Services

Resources are available on-campus for students having personal problems or lacking clear career and academic goals that interfere with their academic performance. These resources include:

- University Counseling Center (<http://www.counseling.ufl.edu/cwc/>), 301 Peabody Hall, 392-1575, personal and career counseling
- Student Mental Health, Student Health Care Center, 392-1171, personal counseling
- Sexual Assault Recovery Services (SARS), Student Health Care Center, 392-1161, sexual counseling
- Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling.

Syllabus Change Policy

This syllabus is a guide for the course and is subject to change with advanced notice.

Detailed Course Schedule:

There are 45 contact hours. 12 - 15 of those hours are recorded lectures. 30 - 35 of the hours are a combination of direct (synchronous) and indirect (asynchronous), online interaction. This comprises synchronous and asynchronous online discussion forums devoted to each of the lecture topics, asynchronous and synchronous question-and-answer sessions, and critiques of students' regularly posted assignments. One or two hours a week are devoted to synchronous discussions, with everyone in the class invited to be present. Those sessions are archived so that students who cannot attend at a particular hour (because they are working or because they live in a time zone that makes it inconvenient for them to participate in a live session) can access the materials.

WEEK 1: SOCIAL NETWORK ANALYSIS OVERVIEW

View Lecture 1: *Introduction and brief overview*

- *Overview lecture (Johnson, 30 minutes)*
- *Installing software (Dillon, 30 minutes)*
- *TED talk by Christakis (20 minutes)*

Readings: *Analyzing Social Networks Chapter 1*

HW: Tutorial 1:

- Register with TED lecture series to view Christakis lecture on social network analysis (<https://auth.ted.com/users/new?referer=http://www.ted.com/profiles/edit>).
- Install Ucinet and Egonet on your personal computer.

Digital drop box: Hand in screenshot of Ucinet and Egonet completed installation.

Potential discussion topics for week 1: Post your research interests & how you think social network analysis will aid your research. Post ideas on how you can incorporate relational data and social structure into your research. Discuss how social network analysis might be used to operationalize theories of cultural anthropology.

Online meeting 1: Introduce each other & discuss lecture & tutorial 1 & postings

View Lecture 2: Basic concepts

- *Basic concepts (Johnson, 30 minutes)*
- *Introduction to Ucinet menus and Netdraw (Dillon, 30 minutes)*
- *Getting data in and looking at existing datasets, attributes (Dillon, 30 minutes)*

Readings: *Analyzing Social Networks Chapter 2*

HW: Tutorial 2:

- Display Padgett data set.
- Load edgelist and display Ucinet data set

Digital drop box: Hand in screenshots.

View Lecture 3: *Concepts of data management*

- *Concepts of data management (Johnson, 30 minutes)*
- *Transform menu, create one modes from two mode, attribute to matrix (Dillon, 30 minutes)*

Readings: *Analyzing Social Networks Chapter 5*

HW: Tutorial 3:

- Create your own one-mode data set
- Display Davis and Davis, create two one-modes from Davis and Davis two mode

Digital Drop box: Hand in screenshots and datasets.

Online meeting 2: Discuss lecture & tutorial 2 & 3, postings& reading

WEEK 2: WORKING WITH DATA

View Lecture 4: *Graph-based network visualization*

- *Graph-based visualization lecture (Johnson, 30 minutes)*
- *Visualize Padgett and class data set in Netdraw, directed and not directed, VNA (Dillon, 30 minutes)*

Readings: *Analyzing Social Networks Chapter 7*

HW: Tutorial 3:

- Create network visualizations (one mode and two mode) using attributes

Digital Drop box: Hand in VNA files

Online meeting 2: Discuss lecture & tutorial 2 & 3, postings& reading

View Lecture 5: *Cohesion, centralization, core-periphery*

- *Whole network characterization (Johnson, 30 minutes)*
- *Calculate measures on one-mode data et in Ucinet (Dillon, 30 minutes)*

Calculate measures (cohesion centralization. Work with output data sets and

Readings: *Analyzing Social Networks Chapter 9*

HW: Tutorial 4:

- Calculate graph-level metrics on one mode data set

Digital drop box: Hand in completed analysis from Excel

View Lecture 6: *Node level measures*

- *Node level measure concepts (Johnson, 30 minutes)*
- *Calculate node level measures in Ucinet and output to Excel (Dillon, 30 minutes)*

HW: Tutorial 5 Calculate node level measures and output to Excel

Readings: Analyzing Social Networks Chapter 10

Potential discussion board topics for week 2: Discuss how group-level versus node-level measures could be used in research

Online meeting 3: Discuss lectures & tutorials 3 & 4, postings, and readings

WEEK 3: STATISTICAL MEASURES, SUBGROUPS, PERSONAL NETWORKS

View Lecture 7: *Statistical measures, multivariate*

- *MDS, QAP, Testing hypotheses (Johnson, 30 minutes)*
- *Tools menu (Dillon, 30 minutes)*

HW: Tutorial 5 Applying statistical analyses in Ucinet

Readings: Analyzing Social Networks Chapter 6

Potential discussion board topics for week 2: Discuss graph measures versus statistical measures, trade-offs

Online meeting 3: Discuss lectures & tutorials 3 & 4, postings, and readings

Digital drop box: post visualization using statistical analyses

View Lecture 8: *Creating subgroups*

- *Cliques, Girvan Newman, Factions, Components (Johnson, 30 minutes)*
- *Ucinet and Netdraw subgroups (Dillon, 30 minutes)*

Readings: Analyzing Social Networks Chapters 11

HW: Tutorial 6: Ucinet and Netdraw subgroup analyses

Digital drop box: post Netdraw subgroups using different methods

Online meeting 4: Discuss lectures & tutorials 5 & 6 & postings

View Lecture 9: *Ego networks*

- *Ego network overview (Johnson, 30 minutes)*
- *Egonet (Dillon, 30 minutes)*
- *Ego network menu in Ucinet (Dillon, 30 minutes)*

Readings: Analyzing Social Networks Chapters 15

HW: Create 50 alter study using Egonet and complete study

Digital drop box: post visualization of your network

Potential discussion board topics for week 3: Discuss difficulties in answering personal network questions. Offer ideas about when personal network approach, whole network approach, or both could be used.

Online meeting 5: Discuss lecture & tutorial 7 & postings

Week 4: VISUALIZATION IN INTERVIEWS, BUILDING MODELS

View Lecture 10: *Using personal network visualizations for interviews, Vennmaker and visual interface for collecting personal network data, Combining interviews into a data set, overlapping personal networks*

- *Interpreting and personal network visualization (McCarty, 30 minutes)*

HW: Tutorial: Interview each other

Digital drop box: post supervised classification, Output from network model

Online meeting 6: Discuss lectures & tutorials 8 & 9 & postings

View Lecture 11: *Triad analysis, roles and equivalence*

- *Triads census, equivalence, roles (Johnson, 30 minutes)*
- *Ucinet Roles and Positions Menu (Dillon, 30 minutes)*

Readings: Analyzing Social Networks Chapters 12

HW Tutorial: Triadic census analysis and equivalence

Digital drop box: Analyze data set

Potential discussion board topics for week 4: Discuss how roles in networks of interest to anthropologists, such as communities, could be tested using equivalence.

Online meeting 7: Discuss lecture & tutorial 10 & postings

View Lecture 12: *Testing hypotheses, longitudinal analysis*

- *QAP, P*, ERGM (Johnson, 30 minutes)*
- *Testing Hypotheses in Ucinet (Dillon, 30 minutes)*

Readings: Analyzing Social Networks Chapters 8

HW: Tutorial Developing a network model from data set

Digital Drop box: hand in Ucinet output

Week 5: Incorporating network analysis into research design

View Lecture 13: *Network measures as independent and dependent variables*

- *Building network models (Johnson, 30 minutes)*

Readings: Analyzing Social Networks Chapters 3

HW: Read ethnography and modify to network design

Digital drop box: post social network research design

Potential Discussion Board Topics for week 5: Discuss the challenges of operationalizing a cultural anthropology research project as a network project. Pay specific attention to trade-off of thick description for network measurement

Online meeting 9: Discuss lecture & tutorial 13 & postings

View Lecture 14: Social network theoretical concepts – social capital (structural holes versus Simmelian ties), diffusion, small world, reciprocity, social support

- *Network theories in cultural anthropology (Johnson, 30 minutes)*

HW: Read example scenarios and match to theoretical concept

Digital drop box: post results

Online meeting 10: Discuss final presentations.