

Study Guide for Second Quiz

The second quiz will be on February 25. The quiz will be brief (not more than 15-20 minutes) and will consist of short-answer questions (true-false, multiple-choice, and/or questions that can be answered in a few sentences). The main purpose is to be sure that you are familiar with the basic concepts and arguments presented in the chapters 3-7 of John Scott, *Social Network Analysis: A Handbook*. Below is a list of concepts and themes that you need make sure that you understand, along with a corresponding page number(s) in the Scott text (2nd edition). Many of these ideas are found elsewhere in the text, but I have tried to indicate the page(s) where they are first introduced or discussed in greatest detail.

- What is an “*incidence matrix*” (more commonly called an affiliation matrix). What is an “*adjacency matrix*” and how do you derive two kinds of adjacency matrices from an affiliation matrix? (41-46)
- Explain the difference between networks that are *directed* versus *undirected*, and between networks that are *binary* or *valued*. (47)
- Explain the approach taken by the *positional* approach versus the *reputational* approach in defining the relevant population for a social network. (55-56)
- What are the problems associated with trying to capture the structure of a social network through *sampling*? (60) How is the technique of *snowballing* used to construct a nonrandom sample? (61)
- Explain the concepts of *adjacency*, *neighborhood*, *degree*, and *distance* (the “geodesic”) as applied to matrices or graphs. (67-68)
- How is the *density* of a graph defined and measured for directed and undirected graphs? (71)
- Why is it problematic to compare densities across graphs of different sizes? (74)
- Explain the intuitive meaning and measurement of the following measures of centrality: *degree* (83), *closeness* (85-86), *betweenness* (86-87), and Bonacich’s 1972 measure (commonly known as “*eigenvector centrality*”). (87-88)
- Explain the intuitive idea (not necessarily the measurement) of graph *centralization*. (89-90)
- What general findings have resulted from applying the concept of centrality to *corporate interlock networks*? (99)
- What is meant by a *component* of a graph? (101)
- How is a *clique* defined in graph terms? (114) What are the choices for measuring cliques in *directed* graphs? (115)
- Compare “*n-cliques*” (115-116) with “*n-clans*” (117) and “*k-plexes*” (118-119) as two ways of relaxing the strict definition of a clique.
- What is the general idea behind the concepts of *structural equivalence* and *block modeling*? (123)
- ~~What is *cluster analysis* and how does it differ from clique analysis? (126-127) What is the difference between *agglomerative* and *divisive* cluster analysis? (129)~~
- ~~Describe in general terms the approach applied by *CONCOR* for implementing block modeling. (131-135). How did Breiger use *CONCOR* to analyze the major divisions in the class structure and what results did he find? (134-135)~~
- ~~Contrast *REGE* (“regular structural equivalence”) with other measures of structural equivalence such as *CONCOR* and *BURT*. (140)~~