

Book Review

John Scott, **Social Network Analysis**, Third Edition. Los Angeles, London and Thousand Oaks, CA: SAGE Publications, 2013, pp. x+201.

John Scott, **What Is Social Network Analysis?** London and New York: Bloomsbury Publishing, 2012, pp. x+126.

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John Scott has contributed two recent sole-authored volumes introducing social network analysis. One is a welcomed third edition of his bestselling text, and the other is a new and highly compelling introductory guide within Bloomsbury Academic's "What Is" research methods series (with other volumes already or soon to be published on topics including online research, qualitative research, community studies, and narrative research). I will abbreviate these new volumes by John Scott as SNA3 and as WhatIs, respectively.

Researchers and students, including college undergraduates, from diverse fields who have very little knowledge of social network analysis and who do not have or seek a strong background in technical-mathematical ideas will find in these volumes a spirited motivation for undertaking social network research, in the form of clear presentations of key concepts and, of special importance, well-crafted reviews of research studies in which the author shows how network thinking and methods have made a difference to the understanding of social and economic life. These are characteristics of both volumes under review. These volumes differ

primarily in the following ways. SNA3 is largely focused on illustrations of key concepts and metrics, featuring a total of some 55 Figures (for example, a graph on 16 nodes accompanied by a table showing each node's degree, relative degree centrality, and sum of geodesics; a table of illustrative data for nonmetric multidimensional scaling showing an original matrix of dissimilarities, an ordinal transformation, and loadings on a two-dimensional solution; a series of blockmodel images illustrating a variety of hypothesized power relations). By way of contrast, the WhatIs volume largely avoids this degree of elaboration (this latter volume has only eight Figures). However, this reviewer was highly impressed by the clear and even cozy style of a volume that, more than a textbook or a handbook could do, draws the novice reader in to a lively introduction to the history, key concepts and measures, applications, and even an excellent section on criticisms of social network analysis.

The first edition of SNA3 was published in 1991 (as *Social Network Analysis: A Handbook*), and a second edition (with the same subtitle) in 2000. SNA3 adds a new chapter on network dynamics,

and the author states (p. x) that he has completely updated the references and discussions. The author's aim has been "to simplify the techniques" of social network analysis so as to make this family of activities "accessible to those with a limited mathematical background," and he hopes that there is enough "to satisfy both the newcomer and the more advanced researcher in need of information on current techniques" (p. x). As a noted authority and contributor to social network analysis, the author serves both newcomer and seasoned researcher with an admirably broad range of literature citations to encourage more learning in depth. An introductory chapter ("This book is a guide or handbook..., and not a text to be read through at one sitting," p. 9) is followed by a core of two chapters that the newcomer is advised to read first (chapters on history and on research design), followed by six chapters on the specifics of network analysis, ranging from density (illustrated by a review of Wellman's studies of communities) to centrality (made vivid by a review of work by Schwartz, Mariolis and others on bank centrality in corporate networks) to positions, sets, clusters, and blockmodels (exemplified by studies by Burt and by John Scott on corporate interlocks and participations in the U.S., Britain, and Japan). Other topics treated at length include cliques, cores, and components; positions, sets, clusters, and blockmodels; dimensions and visual displays of network data; and the newly written chapter on network dynamics, the modeling of change, and explanation testing.

Chapter 6, on components, cores, and cliques, is illustrative of the organization of each of the central chapters. The chapter opens with a reference to the role of the clique in early community and workplace studies (by W. Lloyd Warner and his associates and by Roethlisberger and Dickson, respectively), which had already been motivated in the earlier discussions of the history of this interdisciplinary field. Following discussion of the idea of a fully connected subgraph, connected components are introduced, illustrated in a diagram, and the point-and-click sequence is given for computing components using the Pajek program. Cut-points and Everett's EBLOC procedure are introduced, all without invoking any formulas or equations. Directed graphs (and semi-cycles) are similarly introduced. Nesting of

components (k-cores, based on nodal degree, and m-cores, based on the multiplicities of arcs) are then discussed, based on the author's generalization of Seidman's work. Two successive figures illustrate (respectively) a 3-core and the collapse of a 3-core, based on application of Seidman's idea of the k-remainder; collapse of an m-core is illustrated in the following figure. Doreian's specification of the formal properties of a clique are introduced, as is Seidman and Foster's concept of the k-plex. Work by Kadushin, Alba, and Moore on the identification of social circles, shown as indebted to earlier theorization by Simmel, is reviewed. While the discussion throughout is non-mathematical, it is clear that, just as the novice benefits from an introduction to the concepts, ideas, and motivations, at the same time the advanced researcher is likely to be reminded of relevant previous work that deserves to be thought about anew. As do all the main chapters, this one ends with a review of research studies exemplifying the ideas (in this case, research of D. Crane, N.C. Mullins, A.C. Gattrell, M.E.J. Newman, and others on citation circles).

As with all worthy guidebooks, routes not taken might stimulate further discussion. Thus, while "The Harvard breakthrough" (a section of the history chapter) well satisfied this Harvard-trained reviewer, it is nonetheless a striking omission that research of other centers (notably that of the University of California at Irvine, which of course produced work that suffuses this or any other review of social network analysis; the University of Chicago [though Laumann's PhD is indeed from Harvard, and his work is discussed in the section on community elites]; and earlier the Columbia University of political influence, mass media, and national elite studies) is essentially ignored in the chapter on history and breakthrough. Work of Doreian, Batagelj, Ferligoj, Mrvar, and their colleagues that has led to breakthroughs in generalized blockmodeling is barely mentioned (pp. 135-6) in the blockmodeling chapter. Likewise, work on ERGM models is given just three paragraphs (pp. 144-45) in the new chapter on network dynamics, where the author's decision to avoid math seems especially constraining, even though he (I think correctly) characterizes "the move to dynamic models, longitudinal analysis, and significance testing" as "perhaps, the most

important advance ... since the Harvard innovations of the 1960s and 1970s" (p. 145). This volume is also essentially silent on the relatively new work on social networks and culture, and on geospatial analyses. The chapter on visualization could have benefitted by incorporation of insights from Linton Freeman's chapter on that topic in a 2005 volume co-edited by the author (P.J. Carrington, J. Scott, S. Wasserman, eds. *Models and Methods in Social Network Analysis*, Cambridge).

As mentioned, the other volume reviewed here, *WhatIs*, lacks the degree of elaboration that I have discussed and illustrated above. It nonetheless has important merits. It is written in a highly compelling, conversational style and maintains the voice of an author and engaged researcher rather than the more neutral tones of the guide or handbook writer. (In the old days, as recounted on p. 5, the computer demands for running Clyde Mitchell's version of the CONCOR program "were so great that it could run only because my university rented time on the Manchester super-computer: which was almost as powerful as one of today's mobile phones!") A brief introductory chapter is followed by chapters on history (organized now according to the broad mathematical approaches that are said to have dominated the field: graph theory, algebraic, and spatial), key concepts and measures, applications of network analysis (including Moody and Light on citation analysis of the overall structure of sociology), an especially welcomed chapter on criticisms and frequently asked questions about social network analysis, and a brief chapter on software that mentions UCINET, Pajek, and some of the packages written in R. The criticisms of social network analysis that are discussed (along with responses) include: representations of work as innovative new even though a reinvention of already-existing procedures due to lack of historical knowledge; the charge of triviality; the charge of doing work that is unnecessary; the claim that it's just pretty pictures; the claim that it's simply too formal; and the claim that it's static. The frequently asked questions (to which responses are provided) include, among others: How can I decide who to include as members of my network? Networks include positive as well as negative relations; does this pose any problems for analysis? What are the ethics of social

network analysis; isn't it just a form of snooping and spying?

Both volumes reviewed here provide strong introductions to social network analysis that will be of great interest to novices and that also provide benefits to instructors and advanced researchers. Despite some unavoidable overlap, the volumes complement each other well, and both should find a place on the shelf of many students, teachers, and researchers.