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Hansen, Derek L., Ben Shneiderman, and Marc A. Smith. 2011. *Analysing Social Media Networks with NodeXL: Insights from a Connected World*, Burlington: Morgan Kaufmann, 284 pp.

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Analysing Social Media Networks with NodeXL: Insights from a Connected World (2011) explores the usage of NodeXL, a free template, designed to be used with Microsoft Excel, for the analysis of online social media networks. Hansen et al state that ‘social network analysis is the application of the broader field of network science to the study of human relationships and connections’ (p. 4). Whilst the authors acknowledge that this field of research is relatively new, it has flourished in the twenty-first century due to the ‘new global culture of commonplace network connectivity’, within which ‘people have changed their lives by creatively using social media’ (p. 4). Although social networks themselves predate these technological developments designed to mediate social interactions, it is precisely the inception of online social me-

dia, such as email, Facebook, and Twitter, that have made these networks more ‘visible and machine readable’, thus resulting in new opportunities to map them (p. 3). One of the outcomes of these new opportunities has been an explosion of literature within the field, including *Computational Social Network Analysis: Trends, Tools and Research Advances* (Abraham, Hassanien, and Snáǵel, 2010), which outlines social network tools and explores the central methodologies in social network analysis, and *Connected: The Surprising Power of Our Social Networks and How They Shape Our Lives* (Christakis and Fowler, 2009), which examines how social networks impact on our everyday lives.

What differentiates *Analysing Social Media Networks with NodeXL: Insights from a Connected World* from this canon of work, is that the

book focuses on examining how NodeXL can be used to create visualisations of social networks and assist in their analysis. With NodeXL, researchers can input network data into a table format and, via the click of a button, produce a customisable visualisation of the network. These visualisations assist in the quantitative dissection of social networks, as they visually depict key players in a network, highlight those participants who rarely communicate, display participants in a network who regularly communicate, and illuminate participants in a network who link together other people within the network. Building on this quantitative analysis of networks, researchers can move into a more qualitative analysis by studying the ways in which visualisations of social media networks may change over time in line with social trends and cultural changes, and also hypothesise over patterns in human behaviour within these networks. NodeXL also allows networks to 'be imported from and exported to a variety of data formats, and built-in connections for getting networks from Twitter, Flickr, YouTube' (NodeXL, 2011, online).

The development of the NodeXL template was part of a larger research project funded by Microsoft Research External Research Projects group, which aimed to 'substantially lower the barrier to entry for social media network analysis while at the same time raising the power offered to users seeking network in-

sights' (p. ix). Whilst NodeXL is not the first social media analysis tool, it is one of the most accessible, as the authors of the book acknowledge:

The tools for social media network analysis and visualisation have been emerging from many research groups and start-up companies. These pioneering network analysis tools often require programming skills and knowledge of technical network terminology, making it a challenge for those without programming skills to import and make sense of network data (p. ix).

In line with the project's aim and NodeXL's purpose, the authors have written this book with the assumption that the readers will 'have no prior knowledge of these topics' and with the purpose of introducing readers to social media network analysis via the use of NodeXL (p. 1). Structurally, the book is divided into three sections, which the authors analogise as being 'organised in the form of a tree, with roots, a trunk and branches' (p. 1). The roots are chapters one to three, in which the authors introduce the concepts, theoretical frameworks and literature/historical review of social network analysis; the trunk is chapters four through to seven, in which the practical application of NodeXL is dissected into a 'how-to' style guide; and, finally, the branches are chapters eight to fifteen, in which various forms of social media networks are

discussed and then analysed via importing information into NodeXL.¹

The core theme that underpins the various sections and chapters is the exploration of the social structures and the organisation of various forms of social media, with the central argument being that '[n]etwork analysis provides powerful ways to summarise networks and identify key people or other objects that occupy strategic locations and positions within the matrix of links' (p. 5). Underpinning these matrixes, the authors argue, is a 'sociotechnical infrastructure' that 'influences social interactions' (p. 11). In stating this, Hansen et al insist that they are not presenting a methodological approach based on technological determinism, but instead are recognising that 'technologies change the fabric of the material world, which in turn changes the social world' (p. 12).

The authors perceive social media network analysis to be a key innovation in research methodologies for various industries and academic disciplines. Businesses can use this methodological approach to highlight the participants within their network who 'play critical and unique roles' (p. 4). Scholars from disciplines such as digital humanities can also use social media network analysis to understand the connections between people and the media/cultural artefacts that they are examining (p. 6). In my own discipline, film studies, social media network anal-

ysis can be used in order to uncover the ways in which the online word-of-mouth about films spreads, and decipher trends emerging within this discourse. Researchers from other disciplines within the social sciences could use approaches within this book to uncover trends within online communities, decipher how online communities are created and maintained, and about the structures of these communities.

One of the main strengths of the book is its authors' and contributors' clarity of expression, in terms of both the explanations of specialist lexis, and in the instructions concerning the usage of NodeXL. Some of the book's features, such as the chapters being preceded by concise outlines, key terminology explanations, and researchers' and practitioners' summaries at the end of each chapter, assist in making the book accessible to non-computer science-based readers. Additionally, advanced topics within the chapters are contained within coloured boxes allowing for them to be read independently of the main body of text, and key points or subjects are bullet pointed clearly or sectioned via bold headings.

Where the book does fall down, is in the layout of the instructions of how to use NodeXL. Firstly, the instructions are laid out not in a step-by-step format usually found in instruction manuals, but instead in continuous prose. Secondly the visual instructions of the various

steps are not always located on the same page as the written instructions, making using the visualisations with the written instructions difficult. This seems to undermine the foreword to the section in which it states that these tutorial chapters could be used in order to teach NodeXL to students, in the sense that the layout is not particularly learner-centred (p. 51).

Identified within Analysing Social Media Networks with NodeXL: Insights for a Connected World, are limitations with the methodological approaches presented in the book and with the NodeXL template itself. Whilst NodeXL does allow for the customisation of the appearance of the visualisations produced, it is only capable of handling networks of a modest size, which is about several thousand individual agents, operating within any given network (p. 54).

² This means that larger networks cannot be clearly visualised via the template and therefore it would be difficult to effectively analyse them. Ben Shneiderman (2006) has proposed that when creating visualisations of networks, we should strive to ensure that every agent is visible, the number of connections between the agents is countable, every connection between each agent is traceable from start to end and that clusters/groups of agents can be easily identifiable (summarised in Hansen et al, 2011, 47). Consequently, in order to maintain these standards and to use NodeXL, the authors and

contributors suggest various filtering techniques to limit the data being analysed in any one network. In applying these strategies in order to make the data more manageable it could be argued that the data being analysed is not representative of the total social network. For example, a way of filtering an email social network could be to remove the infrequent email exchanges from the visualisation (p. 115). This therefore limits the network examination to one that looks at the agents that frequently exchange emails. However, in acknowledging these strategies for overcoming the template's limitations, the authors are making their methodologies transparent, and therefore justifying their approach.

What Analysing Social Media Networks with NodeXL: Insights for a Connected World does achieve, to a certain degree, is the democratisation of social media network analysis. It achieves this aim by clearly and concisely summarising research within the field, introducing readers to the language of social network analysis, instructing the reader as to how to use NodeXL for social network analysis, and by exploring network analysis across a variety of high-profile social media platforms. If what Hansen et al argue is true, that '[s]ocial media allow users to collaboratively create, find, share, evaluate, and make sense of the mass of information available online...[and]...to connect, inform, inspire and track other people', then

surely an approach which opens up the analysis of such a phenomena is valuable to the social sciences research community (p. 12). Whilst there are limitations with the book, the NodeXL template, and the methodological approaches at large, what is on offer to the reader is an accessible entrance into the world of social media network analysis.

Endnotes

¹ These chapters include studies written by the authors themselves and contributions from other academics working within the field.

² These agents, known as vertices or nodes, can be anything from people or organisations, to states and countries (p.34).

References

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