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Studying Social Networks

A Guide to
Empirical Research

campus

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1 Introduction

Social network studies entail the use of network representations to understand social phenomena. Social networks do not exist as such but only as concepts. This is illustrated by means of three example studies which also delineate the scope of this book.

Relations matter. You knew this, of course – Why else would you be interested in learning about social network analysis? The real questions are: How, where, when, and why do they matter? And, more pragmatically, how can you show that they do?

This book is organized along the process of an empirical study of social networks. It thus provides a guideline and orientation. While we concentrate on the things that are not treated in textbooks on empirical studies of population samples (i.e., non-relational studies), we still think that the book is largely self-contained.

So, what is the subject of a network study?

1.1 The Construction of Social Networks

It has become commonplace to refer to interacting or otherwise dependent entities as networks. The phenomena described as networks range from the social interactions of human beings and the flow of goods between countries to gene regulation and railroad infrastructures. What do these examples have in common that leads us to think we can model and analyze them in similar ways?

Some of the phenomena referred to as networks are real in the sense that their existence does not depend on our perspective. Online social

networking services, for example, are technology-enabled products. As such they have well-defined elements. A friending protocol specifies the sequences of actions that yield a link between two user accounts. The immanent meaning of such a link is unambiguous. We may refer to the web of linked accounts as a network or not, in any case, it is represented in the service provider's databases.

However, the social network of human beings who own accounts in the above system is an inferred, construed object. It has no independent existence and is thus always subject to interpretation. In these cases, the use of the term network is that of a model or metaphor; it does not denote an unambiguous object but a perspective.

As a metaphor the term "network" is very graphic, immediately evoking images of points and connecting line segments.¹ Metaphors are very useful for memorization and creative thinking. However, it is not necessarily obvious which aspects of a metaphor correspond to actual properties of that which is represented, and which aspects do not.

Another pitfall of metaphors and models alike is the use of similar representations for weakly related phenomena. By abstracting from the non-essential (with respect to a specific perspective), otherwise invalid commonalities and conclusions may emerge. To illustrate this point, consider (statistical) "distributions" as another example of a representation. If both the distribution of life-expectancy in the east of Austria and the household income in a suburb of Berlin are unimodal (i.e., have a single peak), does this imply that there is a relation between these two phenomena? We assume that you would not think so, but it appears to be much more tempting to speculate about such relations when two networks exhibit similar features because it is more easily forgotten that they are simplifying and homogenizing, reductionist representations.

The study of social networks is, hence, the study of a particular type of representation in social science contexts (Freeman 1989). Therefore, social networks are constructs and do not exist as such. They are representations, in which aspects of a social phenomenon – aspects that seem to be relevant in a specific context and for a specific purpose – are expressed in ways more amenable to scientific scrutiny.

Since there are no social networks per se, it is a linguistic simplification when we say that we are studying social networks. In fact we are studying social phenomena by means of network representations. This is carried

¹ It appears that the term "social network" was coined in Barnes (1954), in which precisely this image is evoked.

out by gathering data about aspects of a phenomenon and organizing the data in a convenient form, by applying methods that produce additional, derived data, and translating these back to the realm of the phenomenon. Clearly, this is no different from other empirical investigations. What is distinct in network analysis, however, are the kinds of data and methods, and the reasoning that motivates network representations and justifies the interpretation of results.

1.2 Social Network Studies

We consider an empirical investigation a network study, if the underlying theory, the data, or both, focus on pair-wise relationships. Hence, the commonalities of network studies lie not so much in the phenomena under scrutiny but in the conceptual focus on relations. The following three examples illustrate this position and many other studies are outlined in grey boxes throughout this book.

1.2.1 The Community Question (Wellman 1979)

The growth of cities and the associated modernization processes constitute an important topic in urban sociology research. Community sociology-based urban research, in particular, often described processes of change as loss events: loss of familiarity, belonging, neighborhood, community, and small social networks. Within this tradition of community research, “urbanism” per se is equated with the development towards an “anonymous mass society” (cf. Wirth’s classical essay of 1938).

In the course of urban modernization processes (for example, in the form of urban rehabilitation projects) and the associated residential mobility, the majority of affected residents experienced loss and grief reactions of varying intensity, which were explained in terms of the loss of spatial identity and the networks of relationships that had developed over generations (Fried 1963; and summary in Mühlich, Zinn, Kröning, and Mühlich-Klinger 1978).

The lament over “community lost,” which has been a fundamental theme of social scientific urban research (cf. Wellman and Leighton 1979) since the 1930s, is combined here with an excessive romantic elevation of the patterns that have disappeared. As a counter thesis to the loss of