Introduction

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Social networks have become a very popular interdisciplinary area of research (Borgatti and Foster, 2003; Parkhe et al., 2006). The popularity of the social network paradigm can be attributed to its capacity to shift the emphasis from atomistic explanations, where individuals are depicted as agents making choices and acting without regard to the behaviour of others, toward more relational, contextual and systemic understandings (Borgatti and Foster, 2003), which is highly relevant in the current interdependent world. Moreover, the paradigm features theories, concepts and methodology (Nohria and Eccles, 1992; Wasserman and Faust, 1994; Kilduff and Tsai, 2005; Contractor et al., 2006; Galaskiewicz, 2007) that are readily available and very useful for introducing a fresh perspective to many fields of management and organisation research.

One of the most promising applications of social network perspectives in management and organisation is the research on learning and knowledge management (see Argote et al., 2003a; Easterby-Smith and Lyles, 2003), where researchers are moving away from

'why' to 'how' questions and studying the structure and patterns of organisational learning and knowledge transfer processes (e.g. Borgatti and Cross, 2003; Reagans and McEvily, 2003; Levin and Cross, 2004; Škerlavaj et al., 2007). In their integrative framework of emerging themes in organisational learning and knowledge management, Argote et al. (2003b) acknowledge the importance of contributions studying the properties of relationships between units and their effect on outcomes, either as relationships between two social entities or as a whole system of relationships – knowledge and learning networks in organisations. In particular, little is known about the underlying mechanisms of relational learning and knowledge transfer processes in organisations.

As these processes usually occur across organisational levels this requires a researcher to consider multiple levels of analysis and, as a consequence, to integrate multiple theories. Fortunately, the social network research programme has produced theoretical frameworks such as MTML (see Contractor et al., 2006) for building applicable multilevel conceptual models along with effective explanatory and confirmatory Social Network Analysis (SNA) methods (e.g. visualisations, network descriptives, ERGM, MRQAP) and applications (e.g. Pajek, StocNet, SIENA, UCINET, pnet) to facilitate empirical work.

The potential of applying social network perspectives to the study of learning and knowledge transfer in organisations was also our motivation to organise this special issue. The decision concerning the special issue went hand-in-hand with the arranging of a track on knowledge and learning networks in organisations that we hosted at the European Academy of Management annual meeting in 2008. We aimed to bring researchers together from different disciplines that applied social networks theories, concepts and/or methodology to study learning and knowledge transfer in organisations. The event proved to be a very open forum for exchanging ideas, commenting on papers, and discussing the potential of social network perspectives in management and organisational research. Some time after the conference was devoted to several rounds of reviewing and revising the papers which resulted in the special issue featuring the four papers described below.

In the first paper of this special issue, in their quantitative study, Shumate, Ibrahim and Levitt (2010) deal with information retrieval and allocation in project teams with discontinuous membership. We already know that the turnover of team members has important consequences for the knowledge transfer and learning processes in teams. Similarly, project teams with discontinuous membership (members with certain roles stay within the organisation but move on to different projects) face unique knowledge management challenges. The authors find that discontinuous membership significantly affects information allocation and retrieval in project teams. Namely, continuous team members were more likely to be allocated information in tacit knowledge areas during earlier workflow phases and were more likely to retrieve both tacit and explicit information during later workflow phases. These results suggest that a discontinuity of roles can result in the loss of key information in knowledge teams. Thus, the authors propose that managers should ensure that continuous team members recognise their special role in compensating for such lost knowledge.

The next paper by Su, Huang and Contractor (2010) also addresses information retrieval and allocation. They adopt perhaps the most holistic approach among the four papers by applying the Multi-theoretical Multilevel (MTML) framework (cf. Contractor et al., 2006) to study the antecedents, network structures and outcomes of information

retrieval and allocation among team members within organisations. The strength of such an approach is the possibility to offer a comprehensive overview of the whole process and establish which of the competing theoretical mechanisms explaining it exhibit the best explanatory power. Consistent with the transactive memory theory their results show that both information retrieval and allocation tend to be multiplex and reciprocal, while at the same time information retrieval is centralised and allocation decentralised. Less explanatory power is exhibited by the homophily theory. The study even found that team members tend to retrieve and allocate information across job positions. On the outcome side, the authors found an interesting effect related to the information overload and social status implications of social exchange. Namely, team members were more satisfied when they proactively retrieved information than when unsolicited information was allocated to them by others. Based on their findings, the authors suggest that organisations should move from knowledge management to managing knowledge and learning networks.

The paper by Pina-Stranger and Lazega (2010) takes a novel approach even for the social network research programme by combining intra- and inter-organisational approaches to study collective learning among entrepreneurs in the French biotech industry. In particular, they explore inter-organisational learning through interpersonal advice ties. The authors assume that advice relationships that result in the recognition of the cognitive authority of individuals differ in intra- and inter-organisational settings and that this holds important implications for the collective learning process (and hierarchy among different knowledge domains). They argue that in the intra-organisational setting individuals will tend not to look for advice from colleagues lower down on the organisational status hierarchy, while in an inter-organisational setting the absence of a formal hierarchy will raise the importance of epistemic status and thus result in stronger and more dynamic relational activity. The results of the study indicate that in an inter-organisational setting highly central advisors are also the most active advice seekers, enabling them to maintain their position in (segmented) epistemic communities.

In the last paper of this special issue, Powell and Swart (2010) address an important gap in the existing network literature and offer an alternative understanding of knowledge networks. They recognise the prevalent methodological nature of the existing literature by claiming that it 'focuses on the network rather than knowledge networks'. For this reason, they develop and present a theoretical framework which addresses how knowledge itself behaves at the network level. They discuss a scaling function for knowledge which operates on a concept set, measuring the strength and number of connections between the various constructs therein. In addition, they declare a three-tiered framework relating problem-, knowledge- and information-spaces which underwrite the strength of a particular knowledge structure. Their model is illustrated by an interesting defence project case study and calls for empirical investigations into the proposed theoretical framework.

Several commonalities are shared by the four papers in the special issue. All four papers address information and knowledge flows within and among organisations through the lens of the (social) network perspective. Thereby, three of the four papers are quantitative empirical studies and one is a conceptual contribution featuring a case example. The three empirical studies also share a focus on interpersonal relations (two of them study interpersonal relations in project teams within organisations and one studies interpersonal relations at the boundaries between organisations) and they adopt

Exponential Random Graph Modelling (ERGM) (see Robins et al., 2007). As a final point, two of the empirical papers and the case study in the conceptual paper also have in common extensive data gathering through ethnographic observation and fieldwork.

Nevertheless, some idiosyncrasies of the contributions can also be found in this special issue. For example, Shumate et al. (2010) address instability in networks through discontinuous membership. While most of the papers in this issue focus on distinct theoretical backgrounds, Su et al. (2010) integrate multiple theories and weight their relative strengths. Pina-Stranger and Lazega (2010) combine intra- and inter-organisational approaches. Finally, Powell and Swart (2010) study networks of knowledge per se rather than flows of knowledge in social networks. These idiosyncrasies also build a mosaic of the strongest contributions of this special issue. On top of this, we can also see that, by using confirmatory SNA, empirical research in this area is moving beyond the descriptive level and trying to model higher level structural mechanisms as well. Further, on the basis of the contributions in this issue we could claim that data gathering efforts are moving towards the poles of the continuum; researchers are using either highly efficient web-based surveys or extensive fieldwork and observation.

Yet some gaps in the current research programme are also reflected in the composition of the papers in this special issue. The lack of qualitative work is a big opportunity to develop new insights. Here we are optimistic about future developments because we have seen while preparing this issue that researchers are conducting extensive field work and ethnographic research which we believe could also produce relevant input for illuminative qualitative studies. Longitudinal studies are another promising area, especially because the tools for analytical work are already available. Our main concern here is data gathering, especially in intra-organisational settings. It is extremely difficult to gather several waves of relational data at one site that are of similar quality. Finally, it is unrealistic to expect development without insightful and challenging conceptual work. The paper by Powell and Swart (2010) in this special issue is a good example of such work that includes a case study and thus calls for further empirical work.

At the end of this introduction, we would like to thank everybody who contributed to this special issue: the participants at the conference track for the excellent discussion, the authors for submitting their work and the reviewers for their valuable comments and advice. This special issue can also be seen as an example of how the social network paradigm can be used to offer a new perspective on existing questions in well-established management and organisation research areas. We hope you will find it helpful in applying social network perspectives in your research. We certainly encourage you to try it.

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