

Revising the Socio-Technical Perspective for the 21st Century: New Mechanisms at Work

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ABSTRACT

A predominant understanding in information systems research (ISR) is that technology has institutionalizing, routinizing, and socializing effects in its interaction with users in the human enterprise. Subscribing to these effects from an organizational point of view no longer provides a full understanding of the more complex dynamics in the 21st century workplace inhabited by a vast amount of different technologies with different purposes. Through a critical realist analysis, focusing on patterns in socio-technical structures and more specific actions and outcomes afforded by the recent and forceful adoption of unified communication and collaboration platforms (UCC), the authors see a new, powerful socio-technical mechanism of individualization that is profoundly changing these socio-technical dynamics. Through 18 interviews with knowledge professionals, the study finds that the mechanisms of individualization reduce the influence of the organization as an institutionalizing and socializing socio-technical system. As an example, the power of individualization creates new parallel structures of small networks of close colleagues. Thus, this research sees new structural patterns and dynamics emerging, forming a much more complex, yet self-organizing socio-technical system. The authors suggest expanding the socio-technical understanding of the present techno-organizational reality by taking into account the socio-technical mechanisms that produce certain outcomes. By understanding the fundamental mechanisms at work, they provide those with a fuller understanding of how these mechanisms can enable, while simultaneously crippling, each other. This fuller understanding also aids the pursuit of providing workplaces that achieve both humanistic and economic objectives.

KEYWORDS

Critical Realism, Individualization, Mechanisms, Socialization, Socio-Technical Perspective, Unified Communication and Collaboration

INTRODUCTION

A key concern in IS-studies is to address phenomena relating to the design, implementation or use of an IS (Tarafdar & Davison, 2018) and explain the consequences of the interactive relationship between new technology and new human action (Hirschheim & Klein, 2012; Grover & Lyvtinen, 2015; Sarker, Chatterjee, Xiao and Elbanna, 2019). Technologies have many different meanings, capabilities and uses. They have multiple, emergent, and dynamic properties, as well as transformational powers in the various social worlds in which they are embedded (Orlikowski & Iacono, 2001). ISR often subscribe to a system view (Lee, 2010) and to a view that technology has

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institutionalizing, socializing and routinizing powers in the human enterprise (Robey, Anderson & Raymond, 2013). Studies of IS-phenomena often subscribe (at least implicitly) to the socio-technical perspective (Lee, 2010; Robey et al., 2013; Grover & Lyvtinen, 2015, Sarker et al., 2019), with an inherent ontological distinction between technology and its social context (Robey et al., 2013). As such, most research addresses the interactive relationship between people and technology in a system (Orlikowski & Iacono, 2001). For much of the past research in information systems (IS), the people who interact with information technologies have been regarded in collective and in general ways: as a member of a group of users; as a member of a group of adopters, etc. *The system user* was less an individual than an abstract representation of an entire group of users or a level of study. Accordingly, the notion of sociotechnical systems grew to account for the social nature of the people-technology interaction, forming (implicitly) an axis of cohesion in our IS research community (Sarker et al., 2019). This *sociotechnical perspective* accepts that, in important ways, people interact socially with each other and with their technology (Mumford, 2006). Sarker et al., (2019) state that, broadly speaking, the sociotechnical perspective considers the technical artifacts as well as the individuals/collectives that develop and use the artifacts in the social context. This perspective privileges neither the technical nor the social, and sees outcomes as emerging from the interaction between the two. Further, it espouses a focus on instrumental outcomes such as efficiency and productivity as well as on humanistic outcomes, such as well-being, equality, and freedom (Mumford, 2006). Sociotechnical studies usually involve dynamics occurring inside the organizational 'container' (Winter, Berente, Howison & Butler, 2014). When looking outside, changes to society and human behaviors have been considerable due to digitalization and globalization (Castells, 2010). Alongside these dominant forces, individualization has emerged as a powerful basic form of human behavior. *Individualization* entails the freedom to use one's own resources (Castells, 2010; Baumann, 2011) and to have an individual approach to change (Baumann, 2011). Having control and *freedom to choose* significantly affects human behavior. For example, individualization reduces the influence of institutions and systems. Consequently this influence generates fluid social networks of own choices (Baumann, 2011). We surmise that there is a diminishing importance of the social collective of people in their interaction with technology. The social collective is growing less relevant because the way people interact with their information technologies. People behave increasingly as individuals in pursuit of their productivity and well-being in today's workplaces. However, *individualization* can lead to *individualism*, which is a critical issue. Individualism is a personal exaggeration that detracts from sociality instead of enhancing it. Individualism can alienate humans from each other; some enriching themselves at the expense of others while diminishing the overall community and thereby impoverishing everyone (Hofkirchner, 2014).

Organizations are considered purposeful systems, with tasks, technologies, structures and actors (Bostrom & Heine, 1977). Their value, purpose, and operational criteria are derived from the larger system in which they are embedded (Beer, 1994 in Winter et al., 2014). Thus our interest is to explore the impact of individualization in the current workplace, and how the (apparently) more individualized individual – as opposed to the more socialized individual – influences the sociotechnical system and its purpose when interacting with new technology.

The intended outcome and purpose of different technologies in a social system, can best be described by its spirit (DeSanctis & Poole, 1996). The spirit represents the general intent of the designer, a reflection of the underlying values and goals within the structures in a technology. As an example: ERP systems have the spirit of standardizing input (Strong & Volkoff, 2010); CSCW has the spirit of teamwork (Blackler, 1994); Knowledge Management Systems have the spirit of supporting codification or personalization (Hansen, Nohria, & Tierney, 1999) and UCC (Unified Communication and Collaboration) has the spirit of mobility and connectivity. Recently, UCC has become more business critical, and the deployment is growing fast (D'Antonio & Banting, 2019). UCC platforms accommodate distributed knowledge professionals in carrying out work by giving people the opportunity to connect, communicate and collaborate with colleagues from anywhere,

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