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Chapter XV

Cognitive Research in Information Systems Using the Repertory Grid Technique

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ABSTRACT

This chapter discusses the design and application of a cognitive mapping methodology known as the repertory grid. Grounded in personal construct theory (Kelly, 1955), the repertory grid is an extremely flexible technique to conduct both qualitative and/or quantitative research and, in organizational research, is the preferred methodology for mapping the content and structure of cognition. The aim of this chapter is to expound upon the potential of this technique to information systems researchers by considering the variety of ways the repertory grid may be employed. This application is illustrated by examining published studies in both the information systems and the broader management fields.

INTRODUCTION

The existence and significance of cognition in organizations and its influence on patterns of behaviour in organizations and organizational outcomes are increasingly accepted in information systems (IS) research (Barley, 1986; DeSanctis & Poole, 1994; Griffith, 1999; Griffith & Northcraft, 1996; Orlikowski & Gash, 1992, 1994). However, assessing the commonality and individuality in cognition and eliciting the subjective understanding of research participants either as individuals or as groups of individuals remain a challenge to IS researchers (Orlikowski & Gash, 1994). Various methods for studying cognition in organizations have been offered—for example, clinical interviewing (Schein, 1987), focus groups (Krueger, 1988), and discourse-based interviewing (Odell, Goswami, & Herrington, 1983). This article proposes that cognition applied to making sense of IT in organizations can also be explored using Kelly's (1955) personal construct theory and its methodological extension, the repertory grid (RepGrid). The RepGrid can be used in IS research for uncovering the constructs research participants use to structure and interpret events relating to the development, implementation, use, and management of IS in organizations.

In the context of this chapter, cognition is considered to be synonymous with subjective understanding, "the everyday common sense and everyday meanings with which the observed human subjects see themselves and which gives rise to the behaviour that they manifest in socially constructed settings" (Lee, 1991, p. 351). Research into cognition in organizations investigates the subjective understanding of individual members within the organization and the similarities and differences in the understandings among groups of individuals (Daniels, Johnson, & de Chernatony, 1994; Jelinek & Litterer, 1994; Porac & Thomas, 1989). In IS research, it is the personal constructs managers, users, and IS professionals use to interpret and make sense of information technology (IT) and its role in organizations.

In this chapter, we discuss the personal construct theory (Kelly, 1955) and in particular the myriad of ways the RepGrid can be employed to address specific research objectives relating to subjective understanding and cognition in organizations. It illustrates, from a variety of published studies in IS and management, the flexibility of the RepGrid to support both qualitative and/or quantitative analyses of the subjective understandings of research participants. We hope that this will initiate further discussions and responses to calls for more cognitive emphasis in organizational research (Langfield-Smith, 1992; Stubbart, 1989; Swan, 1997).

We are not implying in this chapter that the personal construct theory and the RepGrid are the best or the only theory and method available to the IS researcher in the study of cognition in organizational settings. There are certainly other cognitive theories and mapping methods applied in organizational research (Huff, 1990; Sims, Gioia, & Associates, 1986). These produce different types of cognitive maps capable of depicting different perspectives of cognition. Our focus is on the subjective understandings of organizational members—that is, personal constructs applied to everyday sense-making. Kelly's (1955) theory and method are widely accepted in the study of cognitive constructs and understandings of individuals in fields from psychology to management.

The primary audience is IS researchers who are interested in investigating the cognitive perspective in the development, implementation, use, and management of IS in organizations. It is anticipated that by examining the subjective understandings in