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KNOWLEDGE MANAGEMENT IN IS RESEARCH¹

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Abstract

This tutorial describes how IS research in knowledge management evolved over the last decade, and discusses pressing issues and questions that remain under-researched. At the beginning of the tutorial, participants will be asked to write down some research questions under various themes related to knowledge management, that they believe are interesting and relevant. We will use these questions later in the tutorial. Based upon an analysis of IS research in six respected journals— Accounting, Management, and Technology, European Journal of Information Systems, Information Systems Research, Journal of Management Information Systems, Journal of Strategic Information Systems, and MIS Quarterly – the tutorial will classify the research into one of four dialogues. The discourses come from a framework developed by Deetz, which classifies research as normative, interpretive, critical, or dialogic. We will spend some time dissecting the meaning of the four discourses. At this point, the participants will return to their questions and be asked to classify their own assumptions based upon the Deetz framework. We hope to enlighten participants on assumptions that they carry, perhaps implicitly, about the nature of knowledge and knowledge management. Finally, we will pose a research theme and discuss how the theme would be addressed in each of the four discourses.

Keywords: Epistemology, knowledge, knowledge management

Introduction

This tutorial has as its objective to raise IS researchers' awareness of the different discourses of knowledge and knowledge management. To frame the theoretical perspectives and assumptions available for knowledge management research, we adopt Deetz's (1996) framework. Deetz's framework allows us to carve the theoretical landscape into four scientific discourses:

- normative,
- interpretive,
- critical and
- dialogic.

We elaborate on each of the discourses of knowledge management by providing an exemplar. We conclude with recommendations for IS-based knowledge management research.

¹The material in this tutorial, as well as the following description, are based in their entirety upon a paper by Schultze and Leidner titled "Studying Knowledge Management in IS Research: Discourses and Theoretical Assumptions," forthcoming in *MIS Quarterly*.

²The tutorial will be presented by Dorothy E. Leidner.

Theoretical Underpinning: Deetz's Framework

To both identify and evaluate the situated definitions of knowledge and its management in IS research on knowledge management, we rely on Deetz's (1996) taxonomy of discourses in organizational science. We briefly describe the four discourses and then provide exemplars of each discourse.

The Normative Discourse

According to Deetz, the normative discourse reflects modernity with its assumptions of progressive enlightenment as well as increasing rationalization, management, and control (also Harvey, 1989). Researchers participating in the normative discourse are concerned with codification, the normalization of experience, and the search for law-like relationships. The objects or artifacts that result from normative research are described as facts that are assumed to reflect nature. This description implies that the research findings are both generalizable and cumulative. Seeking to establish general laws and causal relationships through hypothesis testing, researchers participating in the normative discourse typically rely upon nomothetic methods.

The Interpretive Discourse

The interpretive discourse emphasizes the social rather than the economic view of organizational activities (Deetz, 1996, p. 201). It also embraces premodern and traditional themes in that it is concerned with aspects of organizational life that have not yet been systematized and brought under the control of rationalized logics. People in organizations are viewed as active sense makers, engaged participants, and creators of organizational life. Ethnographic and hermeneutic research methods that are grounded in the social practices of organizational participants are indicative of interpretive research.

*The Critical Discourse*³

The critical discourse is marked by a view of organizations as sites of political struggle and fields of continuous conflict. The objective of critical research is to unmask and critique the forms of domination and distorted communication by showing how they are produced and reproduced (Ngwenyama and Lee, 1997). Cultural criticism and ideology critique are methods used by critical researchers. Highlighting how certain kinds of interest, social practices, and institutional structures conspire to create power differences and how they silence and obscure other voices and alternative perspectives, the critical discourse aims to create the conditions in which the conflicts between different groups can be surfaced, discussed openly, and resolved fairly. This approach implies that the reformation of social order is the objective of researchers participating in the critical discourse.

The Dialogic Discourse

According to Deetz, the dialogic discourse could also have been labeled the postmodern discourse in that it focuses not only on the constructed nature of reality and the role of language in this construction process, but also on the fragmented and multi-vocal nature of this never-ending construction process. The image of social life held by this discourse is one of disjointed narratives and perspectives that fail to add up to a coherent reality. Thus, a single reality remains elusive. Indeed, the dialogic discourse seeks to unpack taken-for-granted social realities in order to uncover their complexities, their lack of shared meanings, and their hidden enclaves of resistance. The dialogic discourse traces power and domination to claims of expertise using deconstructionist and genealogic methods.

In summary, Deetz's classification of discourses can serve as a useful framework in assessing the goals, methods, and hopes of research. When applied to IS research, the framework can help assess which discourses are explicitly or implicitly chosen in a given stream of inquiry. By understanding the discourses, and the assumptions underlying the discourses, one is better positioned to understand and interpret IS research on knowledge management, and to identify potential questions for future research.

³Many subsume research conducted in both the dialogic and critical traditions under the "critical" label (e.g., Jönsson & Macintosh, 1997; Ngwenyama and Lee, 1997; Orlikowski & Baroudi, 1991). The critical discourse that we describe here thus overlaps only partly the critical research as it is defined elsewhere.

Exemplars of Each Discourse

Normative Discourse

Jarvenpaa and Staples (2000) studied the use of collaborative electronic media for information sharing. Specifically, they looked at factors that influence individuals to share knowledge via electronic means. Jarvenpaa and Staples' study assumes both that individuals can share their knowledge and that such sharing is beneficial to the organization. The research question is: what leads individuals to share and what prompts them to share via an impersonal medium?

The authors suggest that "one party has to be willing to give something or get something from another party." They further elaborate on several factors that they assert can predict information sharing behavior. For example, they proposed that open and organic information cultures, as opposed to closed and mechanistic information cultures, lead to greater sharing. They propose that individuals who believe that what they know belongs to them rather than to the organizations that they serve, will be more likely to share. Based on prior research, they develop theoretical antecedents of information sharing and move towards uncovering the various contingencies that influence sharing. Their research objective is to "extend the understanding of the organizational context factors in general and organization culture in particular."

In an empirical analysis of over 1000 survey responses, Jarvenpaa and Staples found that, contrary to their prediction, open and organic information cultures were not associated with the use of collaborative electronic media for information sharing whereas closed and mechanistic information cultures were. They also found that people who believed the information belonged to the organization were less likely to use collaborative media for sharing than were people who believed the information was their personal asset.

Interpretive Discourse

Using a grounded-theory approach, Stenmark's (2000-2001) initial aim was to examine how agent-based retrieval technology could be used in an innovative way. In implementing and studying the use of this agent-based retrieval prototype, he observed unexpected behavior: "the best results were achieved when the users cut and pasted a large chunk of text from a relevant document" into a search agent and "asked the agent to find more similar documents." In contrast, users who were forced to define keywords for a search achieved less favorable results. Built on explicit knowledge and espoused theory of work, agents relying on job profiles linked individuals with others having supposedly similar interests; however, users found the results of the agent "strange" in "the negative sense of the word." Yet users matched to others via an agent that built on similarities in documents that both users found useful—in other words, matching people based on tacit knowledge – regarded the match as interesting and useful.

Stenmark rejects "the positivistic view of knowledge as an objectified and monistic absolute truth" and instead adopts "a pluralistic epistemology, acknowledging that there are many forms or types of human knowledge." This metaphor implies that knowledge cannot be managed like an object, i.e., separate from human action. Rather, knowledge is organizational mind, a web of distributed yet interrelated activities. This view of knowledge is reflected in Stenmark's findings that users preferred to provide examples by pointing to relevant web documents as opposed to citing abstract keywords to describe their interests. That is, the act of recognizing an interesting document uses tacit knowledge whereas the task of selecting descriptive keywords requires a nontrivial translation to explicit knowledge. The tacit knowledge or theory in use is regarded by users as more trustworthy than the knowledge made explicit or the espoused theory based job description.

Given this inseparability of knowledge from the knower, how might technology be applied to knowledge management? Technological solutions to managing knowledge might include the use of knowledge directories, maps, and pointers that assist in identifying experts in the knowledge community, as was one of the goals of the prototype Stenmark studied. However, Stenmark goes further to suggest that web documents and information retrieval technologies can act as a facilitator in the knowledge management process by leveraging tacit knowledge in an intraorganizational web. Indeed, he states that just because knowledge is implicit in behavior, it does not imply that it is outside the realm of IT support. He concludes that instead of trying to identify, capture, and make tacit knowledge explicit – as the normative discourse espouses – IT should be designed to use tacit knowledge to help users locate and communicate with knowledgeable people in their area of interest.

Critical Discourse

Elkjaer et al's (1991) paper focuses on power relations in organizations. In particular the authors wish to stimulate reflection on the social process through which the systems developers' authoritative power and expertise is constituted and maintained. In this endeavor, they rely on two a priori assumptions:

- that systems developers are acting as agents with their own interests and motivations, instead of merely being a disinterested party to the application of a development tool-set or methodology, and
- that prevailing organizational structures are power relations that are incapable of supporting and sustaining open dialog and agreement between users and systems developers.

These theoretical assumptions motivate this research and its objective to reclaim conflict and destroy false order by advocating that systems developers not only take a more critical stance "towards the nature of institutionalization" (p. 154), but also explore "how information systems may be used to change and develop the institutional conditions which currently frustrate and impede communication and cooperation in organizations" (p. 154). In that sense, the paper's objective is in line with the agenda of the critical discourse, which is to unmask domination (Deetz, 1996).

In their endeavor to open Pandora's box (p. 151), Elkjaer et al's (1991) critique the systems development philosophy and methodology described in the 1988 annual report of BSO, a large Dutch technology consulting firm. At the heart of BSO's methodology is an ideology of consensus among users. However, the authors note that the power relations inherent in organizational structures generally restrict the open dialogue that is required for such consensus building. This argument is based on a critical view of institutionalized organizational structures.

Furthermore, organizational control mechanisms are "historically forged through the systematic exclusion and subordination of the proprieties of employees to the impersonal discipline of management and the capitalist market" (p. 153). The theoretical foundations of this perspective on control are labor process theory and the work of Foucault (1979).

Elkjaer et al. fault the consulting firm for remaining silent on issues related to such organizational power structures in the presentation of their own expertise. This expertise was manifest in BSO's systems development philosophy and methodology, which espoused agreement and consensus building through dialogue. The authors do not take BSO's silence on issues of organizational power structures as a form of ignorance or naïveté; instead they see it as a consequence of the commodification of knowledge and as a form of self-censorship contrived by BSO's own need to position itself within relations of power. In other words, in order to put itself into a position of relative competitive advantage and to speak with some measure of authority, BSO needs to commodify its expertise.

However, as knowledge becomes a commodity and "enters a realm of political economy in which any claim to universal utility is subverted by its perceived value to parties (e.g., users and developers) who do not, in practice, routinely assume or accept a shared sense of their respective interests" (p. 152), the systems developers who claim ownership over this knowledge need to render it valuable by making it acceptable to their customers. Hence, the consultants' claims of objective and neutral expertise need to be tempered by their self-interested concerns about securing and advancing their position in a competitive market place.

Dialogic Discourse

Bowker's (1997) paper focuses on the dynamically intertwined and conflicting nature of organizational memory and organizational forgetting, as well as the implications of memory and forgetting on identity, visibility, and power. Bowker highlights the dynamic tension between the selective erasure and clearance of the nursing profession's past knowledge and the construction of a new classification scheme of nursing work that is intended to render the profession more scientific and its work more visible. The motivation behind greater visibility is to ensure that nursing work becomes part of the formal record in the hospital system's informational infrastructure. In other words, the nursing profession does not want its contribution to be either ignored or forgotten.

In his deconstruction of documents related to the Nursing Interventions Classification (NIC) project, Bowker emphasizes the complexity of balancing the positive and negative implications of creating a classification scheme for the nursing profession. He argues that this classification scheme serves as an infrastructure or theory of nursing knowledge, and that it enables nursing work

to become a legitimate part of the patient record. Furthermore, this classification scheme will make nursing knowledge more accessible to scientific inquiry. At the same time, this new classification scheme serves a disciplining function that threatens to turn a care-giving profession into an information-processing one.

Using the NIC project as an illustrative example, Bowker highlights the contradictory nature of organizational learning and knowledge creation: to create a classification scheme that legitimizes and makes visible nursing work, existing knowledge structures must be erased selectively or rendered inaccessible by erecting a barrier that prevents knowledge from the past to seep through to the present. Past knowledge and identities must be sworn off in order to embrace the new profession with all its promises of scientific status, visibility, and the respect that they command. Thus, in motivating the need for a new nomenclature and knowledge infrastructure, the creators of the NIC simultaneously acknowledge and deny the existence of prior nursing knowledge.

Thus knowledge, particularly existing knowledge, is a liability. Such a view stands in stark contrast to the normative discourse's notion of knowledge as an asset. In addition to increasing the visibility of the nursing profession, the new NIC classification scheme acts as a disciplining device. Nurses are no longer supposed to "do everything possible" (p. 121) to help a patient; instead, they are supposed to set priorities and make decisions with the same rationality as the other professions that operate within the contemporary data-centric, information-intensive environment. And by striving for increased visibility through the creation of a classification scheme that allows for easy representation and capture of nursing work in electronic patient records, the NIC project also creates the conditions for an information panopticon (p. 124). Thus one of the challenges of the NIC project is to make nursing work visible enough without making it too visible. This is achieved through continued partial erasure of nursing knowledge (p. 126).

Bowker's paper is exemplary of the dialogic discourse in that it highlights the value of strategic and selective forgetting and the creation of knowledge as the construction of new disciplinary power relationships. The dialogic discourse focuses on the disciplinary practices that operate to create order, knowledge, and power effects.

Conclusion

This paper highlighted that each of the discourses lends itself to a particular aspect of knowledge management research. For instance, the normative discourse appears well suited to studying technology solutions to knowledge management problems. The interpretive discourse, in contrast, is more adept at understanding the implementation and the organizational implications of knowledge management initiatives and technologies. With the paucity of papers in both the critical and the dialogic discourses, it is difficult to identify themes in the dissensus discourses. Nevertheless, based on Deetz's framework and the exemplars presented in this tutorial, we can identify some research topics that may be fruitfully approached from either a critical or a dialogic perspective. The critical discourse is promising with respect to highlighting the social inequities underlying such organizational stratifications as the distinction between service and knowledge work (Drucker, 1993). The dialogic discourse lends itself well to the examination of the contradictions in managing knowledge.

In summary, we encourage researchers to consider their implicit assumptions about knowledge, its meaning and its worth. We further wish to challenge researchers to consider broadening their range of inquiry and to consider perspectives other than the ones with which they are most comfortable. In particular, we hope that this article promotes a line of inquiry into the contradictory and double-edged nature of knowledge.

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