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Juxtaposing Concepts of Knowledge: Knowledge as Object of Research and Knowledge as a Product of Research

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ABSTRACT

Recent debate within the IS academic community concerning the perceived lack of relevance of much IS research motivated the author’s re-examination of assumptions concerning professional knowledge that emerged during his work as a practitioner and have evolved during his time spent in teaching and research. This personal reflection and discussion with colleagues revealed a perceived mismatch between the construct of knowledge as an object of study, using the knowledge management (KM) research stream as a proxy, and the social science research community’s production of formal knowledge. This paper reviews concepts or dimensions of knowledge included within the KM research literature, explores the apparent conflation of knowledge with theory within the social sciences, and suggests increased acceptance and use of historical research methods to help close the gap between theoretical and practitioner knowledge.

Keywords

Knowledge management, judgment, wisdom, rigor, relevance, research methods

INTRODUCTION

As an IS researcher and educator with strong practitioner roots, I followed with great interest the 2001 ISWorld debate, later continued in Volume 6 of Communications of the Association for Information Systems, regarding IS research relevance. The debate stimulated reflection concerning my conception of professional knowledge initially developed during my former experience and learning as a mid-level IT manager and later refined in my current roles as IS teacher and researcher. My reflection and discussion with colleagues revealed what I perceive as a significant mismatch between the construct of knowledge as an object of study, using the knowledge management (KM) research stream as a proxy, and the social science research community’s production of formal knowledge. To the extent that systematically divergent conceptualizations of knowledge as a product of research and knowledge as an asset for achieving competitive advantage exist, one can infer a potential source of the disconnect reflected in the rigor/relevance debate.

The purpose of this paper is to identify the existence of and explore potential sources for the “assumed” conceptual mismatch. In essence, this paper argues that:

1. Despite epistemological pluralism within the IS research community, important dimensions of knowledge are relatively ignored with respect to what constitutes legitimate, scholarly contributions to knowledge
2. By excluding these other dimensions of knowledge as legitimate products of scholarly research, we impoverish the practice of research and diminish the potential for relevance in our work

However, not being content to simply criticize without offering a mitigating strategy, the paper additionally discusses the increased use of historical approaches and methods in conducting IS research as a legitimate and rigorous means of contributing to a richer production of knowledge. The following sections present an overview of knowledge taxonomies drawn from the KM literature, a discussion of epistemological pluralism within the IS community and a more complete

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1 Henceforth, I will simply refer to the research community. While I believe that this argument can be generally applied to any of the social sciences, this paper primarily concerned with the conduct of IS research.
2 I acknowledge that the argument must be carefully framed because clearly there are a variety of epistemologies informing current IS research.
presentation of the argument that a gap exists between our understanding of knowledge gained through knowledge management research and the conceptualization of knowledge reflected in the practices of academic research. The last sections of this paper suggest the use of historical research methods as one possible means of narrowing this gap and briefly address some potential counter-arguments to this thesis.

**CONSTRUCTING KNOWLEDGE**

As the premise underlying this paper is that there is a mismatch between knowledge as conceptualized in the KM literature and knowledge as a legitimate product of research, this section provides a brief overview of types of knowledge that have been used in KM research.

Knowledge management researchers often take a pragmatic approach in conceptualizing knowledge. As Alavi and Leidner suggest (2001):

> It is unnecessary for the purposes of this paper to engage in a debate to probe, question, or reframe the term knowledge, or discover the “universal truth,” from the perspective of ancient or modern philosophy. This is because such an understanding of knowledge was neither a determinant factor in building the knowledge-based theory of the firm nor in triggering researcher and practitioner interest in managing organizational knowledge.

This is not to suggest that Alavi and Leidner found the conceptualization of knowledge to be unimportant. Building largely on the work of Polanyi (1958, 1974) via Nonaka (1991; 1994) and Nonaka and Takeuchi (1995), knowledge management researchers have largely abandoned a positivistic view of knowledge and, as illustrated in Table 1, recognize multiple forms or dimensions of human knowledge (Drucker, 1988; Kogut & Zander, 1992; O'Dell & Grayson, 1998; Davenport & Prusak, 2000; Stenmark, 2000-2001; Sveiby, 2001; Tsoukas, 2003).

<table>
<thead>
<tr>
<th>Knowledge Types</th>
<th>Definitions</th>
<th>Examples</th>
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| Tacit Cognitive | Knowledge is rooted in actions, experience and involvement in specific context  
Mental models  
Know-how applicable to specific work | Best means of dealing with specific customer  
Individual’s belief on cause-effect relationships  
Surgery skills | Knowledge of major customers in a region  
Insights gained from a completed project  
Norms for inter-group communication | What drug is appropriate for an illness  
How to administer a particular drug  
Understanding why a drug works  
Understanding when to prescribe the drug  
Understanding how the drug interacts with other drugs  
Best practices, business frameworks, project experiences, engineering drawings, market reports |

**Table 1. Knowledge Taxonomies and Examples** (Alavi & Leidner, 2001, p. 113, )  
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Of course, these distinctions, appearing in the KM literature, did not spring up unanticipated. Setting aside for the moment Aristotle’s treatment of the subject, recognition of multiple types of knowledge and concerns with the development of wisdom and judgment reach back to the foundational literature of organizational studies and administrative decision-making (Barnard, 1938; Simon, 1945, 1997; Lindblom, 1959). More recently Argyris and Schön’s (1974) and Schön’s (1983) exploration of professional knowing-in-practice action more directly foreshadows Nonaka’s identification of the critical importance of tacit forms of knowledge and the association of this tacit knowledge and the competitive capabilities of firms.

In short, organizational researchers, theorists and practitioners had long held richly nuanced, if not always clearly articulated, conceptualizations of managerial knowledge.

ACKNOWLEDGING EPISTEMOLOGICAL PLURALISM IN IS RESEARCH

Before further proceeding with the elaboration of my argument, it is important to acknowledge that multiple epistemologies do currently inform IS research. As Markus (1997, p. 12) concluded, “… qualitative research has won at least one major championship – academic acceptance, both within the IS field and within the larger domain of academic studies.” Implicit in her statement is the view that this victory includes an acceptance of a variety of post-positivist epistemological perspectives.

Ron Weber’s (2004) editor’s comment provides further evidence of the acceptance of interpretivist-based research within the IS field and evidence of an epistemological pragmatism. While some researchers are certain to disagree with Weber’s deconstruction of “alleged” differences between positivist and interpretivist research regarding meta-theoretical assumptions (e.g., ontology, epistemology, validity and reliability), Weber’s comment is notable for his assertion that researchers working in the positivist tradition are not logical positivists. Weber asserts that “irrespective of whether researchers believe in an objective reality that exists beyond the human mind or a socially constructed reality, all accept that the artifacts they build to understand the world (theories, frameworks, constructs, etc.) are socially constructed… All knowledge ultimately can be undermined and discarded” (Weber, 2004, p. vi). Accordingly, the argument presented here is not intended as another move in the paradigm debate. Thus, one would be misreading the argument to understand it in terms of the positivist/post-positivist paradigm debate.

THE CONCEPTUAL KNOWLEDGE GAP: ELABORATING ON THE ARGUMENT

“Scholarly journals publish research and theory, not journalism” (Schneider, 1995, p. 219). This message has been delivered repeatedly and is exemplified by advice disseminated by senior IS journal editors at the junior faculty workshop held preceding the ICIS 2004. But perhaps it is time to re-examine this core belief.

In her 2003 presidential address before the Academy of Management, Jone L. Pearce suggested the existence of parallel intellectual worlds inhabited by organizational researchers (Pearce, 2004, p. 175):

One of these worlds is the world of scholarship. In this world we build on the intellectual work of others and conduct research in which we seek to carefully check claims against reality… many of us also inhabit a second world…. the world of folk wisdom about management and organizations… This second world is not openly acknowledged, is not as well understood, and is under appreciated.

While confessing that the metaphor of “parallel worlds” is an exaggeration, Pearce (2004, p. 178) suggested that the separation “impoverishes the scholarly world…” and “makes it easier to leave managers’ important challenges out of our scholarship.”

While academic rhetoric declares that scholarly research is conducted in the creation of knowledge, as the quotation opening this section suggests, scholarly research is primarily concerned with the production of theory. The logic is quite simple: scholars must publish to obtain tenure, promotion and recognition in their chosen fields; journals publish theoretical contributions, so researchers must produce theory. Of course there are exceptions and, yes, the field has become more inclusive with respect to what constitutes legitimate theoretical contributions, but the driving logic remains relatively unchanged. Yet while the brief analysis of knowledge presented above includes theory, the KM literature also recognizes important dimensions of knowledge beyond what is represented by theory.

To better understand the separation of the two intellectual worlds, it may help to examine the historical sources of scholarly preoccupation with theory, a habit dating back at least until the time of the classical Greek philosophers. Traditional western

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3 Wisdom of the people, a type of wisdom or understanding often represented by animal fables and trickster stories such as Aesop’s Fables.
philosophy has largely consisted of a search for truth with a capital “T.” Early Greeks recognized the messiness of lived experience and contrasted that indeterminacy with certain and enduring truths thought to exist within the invisible realm of the forms (Hammersley, 1995). These certain truths constituted *theoria*. Relating to the knowledge dimensions discussed above, Aristotle distinguished between “knowledge that is certain, that is necessary and eternal (*episteme*)” and practical reasoning or wisdom (*phronesis*) (Aristotle, 1952; Hager, 2000, p. 282). As Oakeshott argued, western scholarly tradition, particularly since Descartes, has privileged certain knowledge over practical judgment (Oakeshott, 1962; Hager, 2000; Latour, 1999). The distinction between the certain world of scholarly reasoning and the uncertain world of practical judgment was enshrined within the “enlightenment paradigm” and provided the foundation for creation of the modern university (Hammersley, 1995, p. 120; Bok, 1982).

The continuing focus on the production of theory reveals a profound conservatism within the academic community. Certainly those who have fought for the acceptance of research grounded in post-positivist methods would not be surprised. The family feuds occasionally became quite acrimonious. However, at the end of the day and despite epistemological and ontological differences, the core belief that remained to unite practitioners of social science research was a commitment to the production of theory. Even post-modernists have difficulty liberating their ideas from this modernist practice. For example, Calas and Smircich (1999) recognize the irony in finding themselves obliged to theorize against the certainty of theory.

The paradigm debates indicated that many scholars do possess a sophisticated understanding of philosophical issues underlying the creation of knowledge. The gap or mismatch suggested above does not reflect a lack of understanding. More likely, the gap represents a cultural bias reflecting “community-shared ideologies and ideological practices” (Deetz, 1995). That community bias is the reification, if not deification, of theory.

**IS THERE A WAY FORWARD?**

To return to Pearce’s argument concerning the existence of seemingly parallel intellectual worlds: she advocated focusing our academic lens on the study of judgment. “Good judgment is a quality this practicing manager thinks is difficult to find and to train, and as a manager I seek it as best I can, by learning from my own experiences and by desperately asking others for advice” (Pearce, 2004, p. 178). I think it is possible to employ some of the conceptualizations and findings of KM research to re-examine the practice of scholarly research. In particular, consideration must be given to the view that the tacit component of knowledge may be as important as, if not more important than, explicit forms of knowledge (Nonaka & Takeuchi, 1995; Davenport & Prusak, 2000; Stenmark, 2000-2001; Alavi & Leidner, 2001). The issue then becomes whether rigorous scholarly activity is capable of contributing to the development of tacit knowledge.

The distinction between tacit and explicit forms of knowledge may perhaps be better understood by grounding the discussion in a brief examination of what I believe to be an exemplar of rigorous and relevant (to practicing managers) research. The Marchand, Kettinger and Rollins study that conceptualized information orientation exemplifies practice-oriented IS research within the IS management domain (Marchand, Kettinger & Rollins, 2000; Marchand, Marchand, Kettinger & Rollins, 2001; Kettinger & Rollins, 2002). The study consisted of a multi-year international research effort to learn more about “how the interaction of people, information and technology affect business performance” (Marchand, Kettinger & Rollins, 2000, p. 70). There were over 1,000 survey participants, representing 98 companies from 22 countries. The researchers used confirmatory factor analysis and structural equation modeling to analyze the data and ultimately identified a higher-order factor, information orientation (IO), to be positively correlated with various measures of firm performance. The IO is comprised of three lower-order factors identified as information technology practices, information management practices, and information behaviors and values. Of particular theoretical and practical interest, the researchers found the statistical evidence suggested (2000, p. 71):

> …strong IT practices, competent management of information, and good information behaviors and values **individually** do not result in superior business performance. Results from our study indicate that IT practices, management of information and information behavior must **all** be strong and working together, if superior business performance is to be obtained.

The IO model provides the basis for the design of a core MBA IT course that I teach and personal correspondence with one of the authors reveals that the model has been quite successfully employed in graduate and executive level education and consulting. Clearly, rigorous theoretical research can produce findings relevant to practice. So, is there a problem with academic research? I would argue that there is, particularly for students lacking extensive relevant experience. The problem is demonstrated by the exasperated comment of one of my undergraduate students during class discussion. “If they know all this stuff, how come there are still so many problems with IT management?”
Pfeffer and Sutton (2003), in *The Knowing Doing Gap: How Smart Companies Turn Knowledge into Action*, offer multiple answers to that question. One factor that particularly resonated with my thinking while writing this paper concerned confusing “ease of understanding with ease of implementation” (p. 54). That is, model driven prescriptions can be relatively easy to understand but can be exceedingly difficult to implement. While research such as Marchand et al.’s study contains explicit and useful management knowledge, that knowledge is not necessarily sufficient to meet the needs of students and professionals. Pfeffer and Sutton propose that a key impediment is the lack of tacit knowledge, “…the knowledge that is actually used and is useful is transferred by the stories people tell to each other, by the trials and errors that occur as people develop knowledge and skill, by inexperienced people watching those more experienced and by experienced people providing close and constant coaching to newcomers” (2001, p. 19).

While theoretical research has value, it is difficult within the constraints of what is commonly accepted as rigorous research to make meaningful contributions to this “type” of knowledge. Or is it? In some respects, is not the study of history an attempt to vicariously gain a tacit understanding of historical experience to inform and enrich our understanding of current life? Dalcher (2004, p. 306) has argued for the use of case histories and ante-narrative methods in the study of information system failures, finding knowledge relating to particular failures to be “fragmented, distributed and hidden with the context.” Dalcher argued that traditional research methods are unsuitable for studying information system failures because of the emergent properties inherent in such failures and an inability to “clearly delineate causes and effects” (p. 306).

Gaddis (2002) conceptualized doing history as an interpretive process, the goal of which is explanation rather than prediction. In *The Landscape of History: How Historians Map the Past*, Gaddis (2002) conceives history as an interaction between continuities and contingencies.4

By continuities, I mean patterns that extend across time. These are not laws, like gravity or entropy; they are not even theories, like relativity or natural selection. They are simply phenomena that recur with sufficient regularity to make themselves apparent to us… By contingencies, I mean phenomena that do not form patterns. These may include the actions individuals take for reasons known only to themselves.

Historians do not necessarily eschew theory; “theory is ultimately generalization, and without generalization historians would have nothing whatever to say” (Gaddis, 2002, p. 62). However, in doing history, theory is subordinated to explanation and understanding. The data are not smoothed to better fit the theory. Contingencies are not ignored or discounted. History is allowed to be messy. Historical interpretations represent a “vicarious enlargement of experience” (Gaddis, 2002, p. 10). While history does not claim to predict the future, the study of the past does “prepare you for the future by expanding experience, so that you can increase your skills, your stamina – and, if all goes well, your wisdom” (2002, p. 11).

Vicarious experience packaged as historical narrative is not a substitute for experiential learning of reflection-in-action. However, empirical evidence suggests that organizational telling of stories, “particularly those that are concrete and readily identified with, are particularly powerful for transferring knowledge rich in tacit dimensions” (Swap, Leonard, Shields & Abrams, 2001, p. 105).

The story of a company’s failure to adopt a software application designed to automate development of system configurations and parts lists by Markus and Keil (1994) exemplifies the use of historical interpretation to convey or construct knowledge. The article does not add to theory in a traditional sense, and its use of literature is to support the authors’ analysis rather than convey the impression that they are extending extant theory. In contrast, Keil’s (1995) article analyzes the same case in terms of escalation-of-commitment theory (Brockner, 1992). The latter article represents a more theoretically rigorous piece of work that has also been used profitably in class. Yet I have found that the latter article has not evoked the same level of engagement or intuitive learning observed in students discussing the Markus and Keil article.

Organizational storytelling, folk wisdom and case histories do not easily fit within our conceptualization of scholarly research. Yet these genres represent important sources of knowledge. This packaging of vicarious experience is required for a more complete realization of knowledge. There can be no guarantee that what can be learned from these experiences can be directly applied in other circumstances. In fact, it can be virtually guaranteed that the experiences cannot directly be applied in other situations. But much of the knowledge management literature as well as the dominant thought concerning the value of studying history places great credence on the notion that such vicarious experiences do contribute to our ability to act with improved wisdom and judgment.

\footnote{4 Just as social scientists have debated the selection and usefulness research paradigms and notions of rigor and relevance, the purpose and practice of history is also contested (Jenkins, 2003).}
CONCLUSION AND A CONSIDERATION OF SOME POSSIBLE OBJECTIONS

A touch of irony underlies this paper. That is, in reviewing the knowledge management research literature, I perceived a gap between multiple conceptualizations of knowledge informing KM research and practice and the theoretical knowledge that we are expected to produce as researchers. The knowledge we create and publish as scholars is limited relative to our philosophical understanding of knowledge and the manner in which knowledge is described within the KM literature. Our philosophical discourse notwithstanding, the research community has largely equated scholarly knowledge with theory. Thus, knowledge is treated like something that can be passed from one mind to the next, even while positivist-leaning researchers are prepared to accept that knowledge is more accurately recognized as a social construction. This article is not intended as an attack on theory. As demonstrated by the Marchand, et al. (2000) and Keil (1995) studies, theoretical research can be rich, rigorous and relevant to practitioners. The argument is that to focus on theory production to the virtual exclusion of other types of knowledge is to diminish our contributions as scholars.

Not content to simply toss a few stones and run, I suggest that the IS research community consider adopting methods and philosophies associated with the production of historical research as a possible means of achieving greater cross-fertilization between the intellectual worlds of scholarship and folk wisdom.

In anticipation of a few, although certainly not all, of the objections that can be raised against my argument, I offer the following:

1. We use historical methods already: case studies and teaching cases.

   True. However (and I base this criticism on my experience as a practitioner reading IT-related business cases), cases tend to be reportorial, lack richness and often fail to tell an engaging story. The Markus and Keil case (1994) represents an exception, not the rule. The research community tends to construct cases to illustrate theoretical frameworks and to an extent filter out the messiness and conflict inherent in lived experience. By habit and ideology, teaching notes include direct connection to extant theory or models, or the case is not likely to be published.

2. The critique of research offered above is not at all different from post-positivist criticism of positivist research.

   This is also true at least in terms of many of the stated aims for conducting much post-positivist oriented research. Here I am sympathetic to a complaint levied by Weber (2004, p. xi) concerning the “arcane language” often employed in post-positivist discourse. Despite stated intentions to more fairly or transparently represent lived experience, there is a tendency among post-positivist researchers to link their narratives to the philosophical discourse informing their research perspective rather than writing to be understood by the non-philosophically inclined.

3. The research objectives associated with the above approach are managerialist or insufficiently critical.

   At the risk of opening another point of debate, I find the historical approach advocated above can be equally well applied in support of critical studies. Certainly the folk wisdom of the union organizer or even the revolutionary can be shared and interpreted.

4. This proposal sounds interesting and may even be useful, but doing history, even very recent history, is not consistent with our role as social scientists.

   I would offer two responses to this point of view. First, the role and practices of social scientists have been socially constructed (Hacking, 2000; Latour, 1999). Roles and practices can be changed. Second, there is a valid reason for scholarly engagement with the world of folk wisdom. As Pearce succinctly stated, “my academic training has made me distrustful of my folk wisdom” (2004, p. 178). Schön (1983) argued that the development of professional expertise is grounded in reflection-in-action. But as a former practitioner, I can assert that too often the ratio of reflection to action is often less than desirable. I also refer to the work of Kahneman and Tversky (1982), Hogarth (1981) and Schwenk (1984) to appreciate limitations in human cognitive processes. We have learned that common sense is not always common and not always sensible. As scholars, we are trained to judge evidence more critically, to frame our arguments using tighter logic and, hopefully, to reflect more deeply. Consequently, scholarly attention to the messier matters evolving around the development of wisdom and judgment would, as Pearce (2004) suggested, not only benefit the scholarly world, but the world of folk wisdom should also benefit by receiving more exposure to scholarship.

This paper calls for a re-conceptualization of what we are willing to accept as legitimate methodology within the social sciences. Again, I am not suggesting that theory-based research should be discarded! However, this paper does argue that by focusing too intently on developing theory, scholars limit their study to the examination of the patterns of social life, avoiding the contingencies, and consequently diminishing the value of social science research.
The instigation of change cannot percolate up from below; aspiring researchers will do what they must do to achieve tenure and promotion. If change is to occur, senior editors at leading journals will need to carefully examine their own perspectives in the treatment of such work and signal the acceptability of research examining the contingencies as well as the patterns of lived experience. Increasing the interaction between the intellectual worlds of scholarship and folk wisdom promises significant benefits for all participants.

REFERENCES