

Knowledge Management Paradigms, Philosophical Assumptions: An Outlook on Future Research

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This study informs knowledge management (KM) research assessing the philosophical assumptions and paradigms that have formed around the discipline. Reviewing positivism, critical realism, interpretivism or constructivism, and pragmatism the researcher suggests to draw on constructivism to inform KM theory. Moreover, it is suggested that a mixed methods approach is the most suitable to engage in research on KM so that a flexibility can be maintained that will allow to detect what KM is and how knowledge can be managed.

INTRODUCTION

‘Knowledge’ and ‘management’ have existed as separate terms for decades. It was not until renowned Economist Peter Drucker (1993) declared that the future lays in the minds and not the hands of the people that knowledge management (KM) theory was first introduced to mobilize corporate effectiveness (Sveiby, 1990, 1997, 1999; Nonaka, 1991; Wiig, 1993). Knowledge is the corporate asset (Drucker, 1995; Liebeskind, 1996; Wiig, 2004) that is meant to be managed to enhance organizations’ ability to compete (e.g. Campbell, Coff and Kryscynski, 2012; Davenport and Prusak, 2000; Palte et al., 2011; Pascal, Thomas and Romme, 2013; Pavel and Martin, 2011). For this reason, organizations seek to adjust their core business strategies in order to manage knowledge (Burkharda, Hilla, and Venkatsubramanyana, 2011; Erickson and Rothberg, 2011; Nonaka and Takeuchi, 1995).

There is widespread argumentation that the effective utilization of knowledge positively affects organizational performance (Gold, Malhotra and Segars, 2001; Mertins, Heisig and Vorbeck, 2001; Sveiby, 1999), and that KM may assist organizations facing the increasing challenges of global competitiveness (Kalkan, 2008). Inkinen (2016, p. 242) however reports that more “sophisticated research models are needed to manifest the association between KM practices and financial performance outcomes.”

In the KM literature there is no consensus on what knowledge is, whether it can be managed, and how KM is to be practiced. Moreover, there is no consensus among KM scholars on the paradigms and methods used to study knowledge processes in organizations (Alvesson and Kaerreman, 2001; Barley, Treem and Kuhn, 2018; Guo and Sheffield, 2008; Heisig et al., 2016). KM may be interpreted in various ways (Akehurst et al., 2011; Barley et al., 2018; Davenport, De Long and Beers, 1998) and Serenko et al. (2010, p. 3) warn that KM is still in its “embryonic stage”. As Dalkir (2005, p. 6) puts it “at one extreme, knowledge management encompasses everything to do with knowledge. At the other extreme, it is

narrowly defined as an information technology system that dispenses organizational know-how. Knowledge management is in fact both of these and many more.”

KM is arguably the theory of ‘becoming aware of’ knowledge embedded in an organization and the adopting of strategies to leverage it (Bukowitz and Williams, 2000; Mathis and Jackson, 2006). The purpose of this paper is to reflect on the philosophical assumptions and paradigms that have formed around the discipline; for this reason a definition for KM will not be established. In neutrality it can be said that KM is an action discipline that symbolizes a range of strategies and practices used to adopt, create, distribute, enable, identify, retain, share, and transfer knowledge (Jennex, Smolnik and Croasdell, 2008).

Reflecting on philosophical assumptions that have developed around KM research, will assist in determining which paradigm to draw on when asking what question in KM research; these are positivism, interpretivism or constructivism, critical realism, and pragmatism (Burrell and Morgan 1979; Deetz 1996; Easterby-Smith, Golden-Biddle and Locke, 2008; Guba and Lincoln 1994; Schultze and Leidner, 2002; Schultze and Stabell, 2004). To begin, the paradigms that have developed around KM are addressed together with a discussion on their feasibility for the discipline; this will be followed by a suggestion to facilitate theory building in the KM discipline through a constructivist agenda adopting a mixed method research approach.

PARADIGM DEVELOPMENT IN KM

When engaging in KM research, a reflection on the philosophical assumptions and paradigms that have formed around the discipline is valuable; even more so since knowledge is included in its definition (Schultze and Stabell, 2004). KM as a discipline originates through the contributions of scholars in economics, sociology, philosophy, and psychology, intellectual capital, artificial intelligence, information technology (IT), strategic management, and human resource management (HRM) (Baskerville and Dulipovici, 2006; Prusak, 2001; Swan, Scarbrough and Preston, 1999). The first main contribution to the KM community are Nonaka and Takeuchi’s (1995) *The Knowledge Creating Company*; Sveiby’s (1997) *The New Organisational Wealth*; Wiig’s (1993) *Foundations to Knowledge Management* and *The Knowledge-Based Theory of the Firm* and its generation and application of knowledge by Grant (1996) and Spender (1996). To date, Heisig et al. (2016, p. 1186) find that eight research themes dominate the discussion on KM; these are: “business strategy, intellectual capital, decision-making, knowledge sharing, organizations learning, innovation performance, productivity and competitive advantage”; and that there yet has to be an agreement on what KM, and what knowledge actually is (Barley et al., 2018; Serenko et al., 2010).

Fahey and Prusak (1998) explain that developing a working definition for knowledge is problematic since the term serves numerous purposes. In principle knowledge means to know an action or process, where ‘know’ derives from the Latin word *noscere* standing for ‘to know’ and ‘ledge’ standing for ‘action’ and ‘process’ (Searle, 1969 in Senge et al., 1999, p. 421). Moreover, through Polanyi (1998) we learn that knowledge may be either explicit or tacit in nature and that knowledge emerges through individuals integration in the world (see also Argote and Miron-Spektor, 2011; Gourlay, 2006).

To develop an understanding of the different paradigms for KM we look for ontology and epistemology. Ontology assists in identifying the study’s subject and hence what is considered to exist, and in what form—i.e., tacit knowledge embedded in individuals (constructivism) or information stored in information technological (IT) systems (positivism)—(Guba and Lincoln, 1994). Schultze and Stabell (2004, p. 553) suggest asking ‘*what* is knowledge’ and ‘*when* is knowledge’ to identify the epistemological positioning. By asking *what* can be known, the research object can be identified, and asking *when*, can determine the structure and activity within which knowledge exists (Cook and Brown, 1999)—e.g., within individuals, corporate space and IT systems. Addressing *how*, then enables the methodology to use to observe reality (Guba and Lincoln, 1998). The approach to axiology then determines the purpose and use of the research outcomes.

Positivism in KM

* Knowledge is viewed as an asset and the role of KM is to progress individuals, organizations and society to the ideal state of enlightenment (or competitive strategy)” (Schultze and Stabell, 2004, p. 557).

Positivists seek to make universal generalizations based on empirical research (Mingers, 2014). A positivist is concerned with the discovery of the ‘real’ world, an objective world. Theory testing is often seen in positivist research, where the emphasis lies in generating universal laws by measuring and observing the physical and technological world, as well as human activities in an external space (Guo and Sheffield, 2008). Positivist scholars developed the knowledge-based theory of the firm that emerged from the resource-based view (Grant, 1996; Senge, 1990). An example of a KM research conducted via a positivist framework is the study of Holsapple and Joshi (2004). Holsapple and Joshi (2004) set out to strategize how different types of knowledge can be managed, conducting a survey study, the authors developed a knowledge chain model that can be used to enhance competitiveness. The findings are representational laws to be used elsewhere (Guo and Sheffield, 2008).

Through a positivist lens knowledge is the most important asset of a firm; knowledge is an asset insofar that it is stored and used beyond its original creator, in i.e. books, the Internet, and IT systems (Schultze and Stabell, 2004). This view on knowledge and its management is widely shared: the KPMG (2003) survey recognized that 80% of participants see knowledge as a ‘strategic asset’; and the discourse on IT dominates the KM literature with 70 % of KM publications focusing on IT solutions (Easterby-Smith and Lyles, 2003). It may be argued that the IT agenda has indeed been “highly successful in colonizing the discourse of KM” (Scarborough, Robertson and Swan, 2005, p. 204), the concern is however that IT may never be an effective solution for KM as it is only 20% of knowledge that may be explicit and possibly processed through IT systems (De Long and Fahey, 2000; EIU, 2007). The critique is how positivists can engage in research on knowledge, when knowledge is an intangible good that is tacit in nature and embedded in individuals and organizations, and may only exist during social interaction (Ma and Yu, 2009).

Constructivism in KM

KM exists to those knowing, believing, interpreting, using, and developing the discipline (LeCompte and Schensul, 1999).

Constructivists, also known as interpretivists (Guba and Lincoln, 1994), believe that the world is socially constructed and that “there exist multiple socially constructed realities not governed by any natural laws, causal or otherwise” (Guba and Lincoln, 1989, p. 86). The social world exists on basis of language and meaning (Wittgenstein, 1958) where "organizational phenomena construct each other" (Schultze and Stabell, 2004, p. 557). KM is in itself socially constructed (Earl, 2001; LeCompte and Schensul, 1999; Nonaka and Peltokorpi, 2006). KM as a concept emerged in the 1990s through the interpretation that ‘knowledge work’ and ‘knowledge workers’ will lead to corporate success (Drucker, 1993; Toffler, 1990; Quinn, 1992), KM has indeed been constructed by interested parties in management studies such as human resources management, total quality management, and information systems, psychology and economics (Argote, 2005; Baskerville and Dulipovici, 2006; Earl, 2001; Gu, 2014; Nie, Ma and Nakamori, 2009; Nonaka and Peltokorpi, 2006; Swan et al., 1999).

Under the constructivist view KM is situated in specific contexts or communities that share a common belief that KM exists and is relevant (Hazlett, McAdam and Gallagher 2005). Kuhn (1970) instructs us that paradigms form under such conditions as “paradigm develops through consensus within a social community of scientists through practical mechanisms such as learning societies, journals, or funding bodies” (in Mingers, 2004, p. 90). As communities can alter over time, so can their way of defining KM.

For a constructivist it is accepted that knowledge originates from individuals (Polanyi, 1967, 1998), indifferent to whether knowledge is tacit or explicit in nature. Through individuals’ ability and willingness to interact with the environment, knowledge may be processed and thus managed (Gertler, 2003; Wiig, 2004). For constructivists the human-factor in KM is important (Heisig, 2009; Jakubik, 2011)

as knowledge cannot be managed without individuals' participation in knowledge processes (Felin and Hesterly, 2007; Kaufmann and Runco, 2009; Rechberg and Syed, 2014; von Krogh et al., 2000). In fact, "knowledge is not created by some relation (or 'interaction') between two kinds of knowledge [explicit v tacit], but through human activities or practices" (Gourlay, 2006, p. 1428).

Constructivists seek meaning behind the fuzzy term of knowledge and to understand the purpose of KM in social systems, such as organizations and communities of practice (Alvesson and Kaerremann, 2001, LeCompte and Schensul, 1999). A constructivist does not see knowledge to be an asset, yet as an intangible form of knowledge that is in question to be manageable. It is understood that there can be no separation of knowledge from the individual knower, or the social group in which knowledge is created (Cohen, 1998; Pentland, 1992; von Krogh and Roos, 1995). Constructivist researchers grasp meaning of social actions (Bell, 2010). Constructivist researchers in KM refer to theoretical constructs such as organizational learning (OL) and Weick and Roberts (1993) notion of the 'collective mind' of a n enterprise.

To develop theory, a constructivist researcher looks for patterns and creates meaning about social actors' pluralistic interpretation of the world (Creswell, 2003; Karataş-Özkan and Murphy, 2010). The epistemological position is that there are no such things as facts or law-like generalizations that can be drawn. Instead, everything evolves through social practices and shared cultures between individuals and groups (Mingers, 2004). As an example, Cassell et al. (2006) studied individuals' perception and understanding of KM, and Orlikowski (2002) observed employees everyday activities within a corporate space to see how they relate to KM. Another study by Hahn and Subramani (2000, p. 303) interviewed knowledge managers about "the nature of the knowledge and the locus of the knowledge underlying knowledge management systems". Constructivist researchers in KM place emphasis on the role of the employees and the need for employees' willingness to engage in KM practices (Earl 2001; Rechberg and Syed, 2014a).

Critical Realism in KM

"Knowledge is the fundamental factor of competition and companies with superior knowledge are better equipped" (Ma and Yu, 2009, p. 183).

A critical realist studies the nature of causality within a world that exists independent of human knowledge (Bhaskar, 1978). For a critical realist, KM is a product of the struggle for competitiveness amongst knowledge intensive social players. KM is a strategy that can enhance best practice in a social setting within which knowledge is seen as the source of power (Foucault, 1977) and a corporate asset (Drucker, 1993). Kaufmann and Runco (2009) for example argue that the tacit element of knowledge is the most competitive source of labor security (see also Rechberg and Syed, 2013).

The realist takes an active role as the investigator trying to find that power and knowledge are closely interlinked if not even interchangeable (Foucault, 1977). The goal is to improve the world by illustrating the power relations and to alter the way things are done. A critical realist sets out to uncover assumptions that are made about the world to bring awareness to the inequality of power amongst social groups (Mingers, 2004). Nie et al. (2009) did for example uncover such inequality when reviewing the literature finding that KM is tending to be used as the next management strategy to exploit the labor force. Rechberg and Syed (2014) address the tendency of the appropriation of individual knowledge by management as well as the possible struggle of knowledge ownership that may emerge though the concept that knowledge is power (Rechberg and Syed, 2013). Other discussions on the struggle for power in the knowledge economy occur in subject areas such as international class division, international political economy, intellectual property and copy rights laws (i.e. Dulipovici and Baskerville, 2007; Tseng and Fan, 2011). Realists thus try to use their research to empower the underprivileged by informing them about the systematic reproduction of social constructs that are seen to be misleading and suppressing. Adopting a critical realistic approach can help in examining the concept of KM in relation to equal opportunity rights, labor exploitation and employability.

Pragmatism in KM

“Knowledge is understood as always being incomplete, formed and continuously assured by human argumentation within an inter-subjective community of communication” (Stumme, Wille and Wille, 1998, p. 451).

Pragmatism was created by Peirce (1878) and officially founded by James in 1897 as an alternative research paradigm. Research conducted via a pragmatic or pluralistic paradigm sets the focus on the research problem, choosing methods that can best answer the research questions (Creswell, 2003). A pragmatist looks at practical consequences, where the research entails and tries to assist in solving real-world situational problems. Moreover, pragmatists see irresolvable conflicts embedded in an external reality (Tallise and Aiken, 2005), with ideas being produced by the group of individuals, not solely by the individual (Snarey and Olson, 2003).

Pragmatism thrives for functionality, accuracy and credibility (Age, 2011; Vo, 2012). For a pragmatist, knowledge is the outcome of inquiry that forms through the interaction with the environment (Biesta and Burbules, 2007; Dewey, 2005). According to Reitz (2017, p. 187), the intention of a pragmatist is not only to achieve “conceptual clarity but a renewed empirical view and the chance to explore hitherto unseen connections.” Under a pragmatist agenda constructs can be known in numerous different ways (Shalin, 1987) where several theories may strive for dominance simultaneously (Age, 2011; Blosch, 2001). In the view of the author, this challenge of theory poses a risk to the very foundation of KM as a discipline. In a related field, Gómez-Pérez, Fernandez-Lopez and Corcho (2006, p.5) find that a pragmatist in IT systems research follow the principle that “data structure and knowledge bases are designed not to represent the world faithfully but to work more effectively for the purpose they have been designed”. A pragmatists’ truth is hereby aligned with what the researcher considers most valuable (Gómez-Pérez et al., 2006). Questioning the usefulness of a discipline before it has fully emerged is arguable counterproductive. For this reason, a pragmatic approach may be a better research fit if more is known on the subject of KM.

DISCUSSION

KM is a “complex,dynamic and very fuzzy construction” (O’Donnell, 2004, p. 295), with no consensus on what constitutes the center of the discipline, or which research philosophy to follow when studying KM (Guo and Sheffield, 2008). This multi-directionality causes a debate about what knowledge is, and whether it can be managed; it roots from the discipline emerging through the contribution of a great diversity of scholars from disciplines such as IT, psychology, economics and management studies (Argote, 2005; Baskerville and Dulipovici, 2006; Gu, 2004; Nie et al., 2009; Swan et al., 1999).

In the previous section it was discussed that although positivism dominated KM research, only 20% of knowledge, namely explicit knowledge, can be managed through IT systems (De Long and Fahey, 2000; EIU, 2007). The most competitive source of knowledge, embedded in the individual cannot to be studied through a positivist lens. A realist accepts that knowledge is constructed, but emphasizes that there is a ‘real world, of causalities beyond the conceived reality’ (Mingers, 2004). Whether KM is a result of external causalities such as economic drivers may however be questioned as KM may exist only to those who create it or know of its existence: knowledge workers are a product of the 21st century. Critical realism in KM is crucial to address the possible exploitation that comes with it, but a critical realist approach may be less equipped to build a strong foundation for a disciple that is still in its infancy 30 years after it has been established.

In the reminder of this analysis the author sets forth arguing for a constructivist approach to inform KM theory. In order to justify ones paradigm choice, and address *how* to undertake KM research, and thus what research methodology is best suited to obtain answers, Guba and Lincoln (1994) suggest answering the following questions:

“*The ontological question*: What is the form and nature of reality and, therefore, what is there that can be known about it?” (Guba and Lincoln, 1994, p. 108). If knowledge is embedded in the mind of individuals (Weick and Robert, 1993) there can be no separation of knowledge from the individual

knower and the social group in which individuals collaborate to create knowledge (Cohen, 1998; von Krogh and Roos, 1995). For a constructivist, “individual learning does not necessarily lead to organizational learning” (Karataş-Özkan and Murphy, 2010, p. 458); here the individual is the source of knowledge.

From a constructivist paradigm, knowledge is ever changing and the epistemology is one of practice. Here knowledge is interpreted as ‘mind’ and rooted in individual knowledge carriers (Schultze and Stabell, 2004). A constructivist paradigm allows studying “relational processes of knowledge construction in the course of social interaction in organizations” (Karataş-Özkan and Murphy, 2010, p. 461). KM is an action discipline, and complex and flexible in how it is practiced (Jennex, Smolnik and Croasdell, 2008). Truth cannot be externally known, but is socially constructed (Hatch and Cunliffe, 1997) and knowledge is continuous and shaped by individuals and their interaction in the social world (Schultze and Stabell, 2004).

There is no universal definition or law, and no external world that constructs KM. Instead, KM is a social system or process constructed in organizational specific context, where knowledge is rooted in and emerging through individual interpretation and interaction with the world: a constructivist paradigm is thus seen as a suitable fit for a study on KM (see also Alvesson and Kaerremann, 2001; Karataş-Özkan and Murphy, 2010; Ma and Yu, 2009).

“The epistemological question: What is the nature of the relationship between the knower to the would-be knower and what can be known?” (Guba and Lincoln, 1994, p. 108). According to Burrell and Morgan (1979, p. 3) it is the individual who “creates, modifies and interprets the world”. Respectfully, the individual employees within the work environment rather than information in IT systems is a suitable subject of KM research. As there may be multiple interpretations on what can be known, findings develop through the interaction process between researcher and researched (Guba and Lincoln, 1994).

It is not in the interest of a positivist to lose objectivity and therefore to engage in dialogue with those studied. Studying KM for “conventional benchmarks of ‘rigor’, internal and external validity, reliability and objectivity” (Guo and Sheffield, 2008, p. 676) is problematic, as knowledge is intangible and tacit in nature, embedded in individuals and organizational space (Ma and Yu, 2009). A positivist may therefore only gain a limited understanding of KM as individuals’ e m o t i o n s a n d knowledge may not be measured. As to Habermas (1971), it is this explicit knowledge, which has been freed from human interest and attitude that is the *only* true form of knowledge (see also Chia, 2003). Polanyi (1998, p. 64) advises, however, that such a promise of science is limited since “knowledge in science is not made but discovered” by individuals.

Even though research axiology of neutrality and representational laws may be valuable for some research, it is seen as too optimistic that general laws can result from the research on KM. KM effectiveness may be affected by various intangible aspects such as corporate culture and personnel. Individual values matter and thus generalizations are not seen to be reputational for understanding how knowledge is interpreted and managed in organizations.

Implications

According to Ma and Yu (2009) the KM discipline is developing slowly since there is the tendency of KM authors co-reference each other (also see Baskerville and Dulipovici, 2006). This agrees with Kuhn's (1970) paradigm development where the overlap with other disciplines can enhance such dominance. KM as a discipline lacks a common definition, embodying various taxonomies around knowledge, KM and how it can be studied (Guo and Sheffield, 2008; Jakubik, 2011). Von Krogh et al. (2000) rightfully wonder whether KM as a discipline in itself is limited.

Organization theorists express the need to manage individuals’ collective knowledge (Barney, 1991; Penrose, 1959). Wheatley (1992) warns however, that the ‘Weltanschauung’, the view of the world of the 1980s, cannot address the complexity of modern organizations. Rechberg and Syed (2013, 2014) extensively discussed knowledge and its management, explaining how the attempt to manage knowledge may obstruct its very mission. In 2002, Schultze and Leidner showed that half of research conducted in KM is of positivistic nature. These findings are confirmed by Barley et al. (2018) who in their meta-

analysis on KM found that the majority of KM scholars chose an ‘objective-based conception of knowledge’ where the emphasis lies in addressing *where*, *which*, and *what* questions. Examples to such research agendas could be *where* is knowledge located in the organization; *which* knowledge is to be processed; and *what* knowledge adds value. Here knowledge is a defined object. Less authors follow a ‘practice-based perspective on knowing’ focusing their research on addressing *how* questions: *how* can knowledge be shared in the organization and *how* can knowledge become wisdom. It is however only through addressing *how* questions that new understanding on KM can be formed (Barley et al., 2018).

The KM discipline is people focused and socially constructed. The theory of knowledge explains that individuals are the source of knowledge (Polanyi, 1967, 1998). Nonaka, Toyama, and Hirata (2008, p. 2) therefore rightfully ask for a “paradigm shift in the way we think about knowledge and its management”. A positivist approach may certainly assist in utilizing information flow, yet a constructivist view is needed to determine whether information is actually used by the receiver. And it is through critical realism that we can then address the challenges of the power struggle in the 21st Century knowledge economy.

One may agree with Guo and Sheffield (2008) who stated that the “paradigms are considered as not mutually exclusive or incommensurable, but as points of triangulation on knowledge that emerges from discourse among KM researchers and practitioners about theoretical perspectives, research paradigms, and research methods” (p. 676). Burrell and Morgan (1979) do however warn that the “paradigms exist independent of each other and - they are unrelated and should thus not be compared or mixed” (in Mingers, 2004, p. 88).

According to Ma and Yu (2009) and Serenko et al. (2010) KM research draws too little on practical research, whereas practitioners draw on scholarly work to inform corporate KM practices (Booker et al., 2013). This gap between KM research and its application in practice may be one possible cause for KM ineffectiveness. Spender (2008, p. 167) states that “absent a conceptual break with the concept of action as inevitably purposive there can be no substantial theory of knowledge management.” It is essential therefore for KM scholarship to draw from practice, i.e. employees’ suggestions to inform KM scholarship. For this reason, Guba and Lincoln (1994) suggest answering the following questions:

“*The methodological question*: how can the inquirer go about finding out whatever he or she believes can be known?” (Guba and Lincoln, 1994, p. 108). Since meaning is derived through the construction of reality, a constructivist approach to methodology is seen to be the best fit. Such an approach to research seeks to find “how things really are and work” and so “structuring the inquiry so as to be able to discover (or test presumptions about) causal mechanisms is especially important” (Guba and Lincoln, 1989, p. 89). Nonaka and von Krogh (2009, p. 248) call for “extensive research ... in the concrete lived time of practitioners” to study individuals’ “subjective reality” (Locke, 2001, p. 9). Walsham (1995) suggests that in-depth case study research, for researchers employing a constructivist paradigm, is the most appropriate method. Through a case study approach, new knowledge and meaning about a phenomenon can be studied (Eisenhardt, 1989), in particular where phenomena is not well documented (Bryman and Bell, 2003), such as what makes KM practices value adding for its users.

It is through the chosen methodology that the perceived reality of individuals can be reconstructed. Methodological choices can vary to enable theory building (Glaser and Strauss, 1967), allowing for mixed method research. Mackenzie and Knipe (2006) promote that any paradigm may employ mixed methods to fully inquire phenomena, and Creswell (2003) and Thomas (2003) suggest that qualitative and quantitative methods are complementary and can be incorporated at different stages for research to enrich data collection, necessary to enrich the KM field of research.

Meaning of phenomena such as knowledge processing in the corporate setting can be derived at through qualitative research, where qualitative research is an umbrella term covering “a range of interpretative techniques which seek to describe, decode, translate and otherwise come to terms with the meaning” (Van Maanen, 1979, p. 520). For example, in an organization where knowledge processes are not explicitly named as such, semi-structured interviews allow to identify corporate language around KM processes. Rechberg (2013) for example found that employees may participate in KM practices or build opinions on corporate KM practices without using the language referred to in the literature. Not

conducting interviews to identify the corporate language may result in the assumption that employees at that organization do not process knowledge as they do not know what the term 'KM' per se is.

After interviews have been conducted the research can be enriched through statistical analysis. Through quantitative research a better understanding of phenomenon can be developed, as quantitative data may deepen description and understanding of qualitative data (Avenier, 2010; Mackenzie and Knipe, 2006). Drawing on interviews and the local corporate language, the researcher can now ask survey questions and study corporate training practices to determine the extent to which employees participate in KM practices, on such bases more holistic conclusions can be drawn (i.e. Rechberg and Cacciolatti, 2013).

Applying mixed method research through a constructivist lens has potential to substantially impact the development of KM as a discipline. Being able to mold research tools to research problems is necessary to build impactful KM theory. A mixed method approach to research under a constructivist agenda allows for the flexibility needed to focus on how to find answers to the issue under investigation. Drawing on mixed method research under a constructivist agenda allows the researcher to among many others: identify the effectiveness of KM practices in corporate settings; compare the impact of differing corporate cultures on employee participation in KM practice; study how corporate hostility, employee empowerment, team structures and the IT system will affect employee knowledge processing behavior.

Limitations

The greatest challenges for analyzing data, in particular qualitative data are "credibility, transferability, dependability, and confirmability" (Shah and Corley, 2006, p. 1826). It therefore is important to reflect on the role the researcher plays in the entire process, and thus data collection and analysis (Alvesson and Harley, 2008; Cunliffe, 2003). Analyzing the data, the researcher may consider physicist and Nobel Laureate Werner Heisenberg, stating that: "what we observe is not nature itself, but nature exposed to our method of questioning" (in Capra 1997, p. 40). In example, the 'interviewer effect', where both verbal and non-verbal cues, as well as the difference between the said and the meant, will influence the way the data will be interpreted (Gummesson, 2006). Gummesson (2006, p. 174) argues however that the researcher's "strengths are empathy; ability to listen; creatively interpret meaning; conceptualize; and see new phenomena or see old phenomena from a different angle, [and that] we should certainly make the most of them."

Indeed, constructivists find it difficult to follow the positivists' approach to neutrality. For a constructivist we live in an 'inter-subjective world', the observer is therefore not neutral, but is involved in the social infrastructure (Guo and Sheffield, 2008). This constructed agenda is understood to be trustworthy and authentic, and a good alliance of social norms and values (Guo and Sheffield, 2008). An interesting dimension of conducting research in KM is that the researcher appeals to respondents to share their knowledge, to manage that knowledge, without losing it, seeking to create new knowledge (i.e. building theory) in an explicit document (journal article), that can then be transferred and shared with others. In this respect, KM is done while using KM as a strategy to manage and make sense of respondent's knowledge.

A constructivist agenda makes it challenging to generate generalizations, something the KM discipline arguably is in need of. Additionally, scholars know that it is more challenging to publish articles that are qualitative rather than quantitative in nature. In ways it therefore can be understood why so many scholars have drawn on positivism or even pragmatism to study KM, but to study KM without being thoroughly aware of the meaning of knowledge, will make out of the management of knowledge, strategies to manage information.

CONCLUSION

While there is no doubt that there exists an academic field of KM, the question on "what it is, how good its work is, and what its prospects and needs are" is still unclear (Ma and Yu, 2009, p. 175). This paper is unique in that it brings awareness to the philosophical assumptions and paradigms that inform

KM research. Reviewing positivism, critical realism, interpretivism or constructivism, and pragmatism it is explained that the positivist/quantitative approach to research dominates the KM discipline (Chen and Chen, 2006; Ma and Yu, 2009), even though knowledge is predominantly tacit and constructed by individuals' interaction and interpretation of the world. The positivist approach to research in KM is seen as the main reason for KM remaining at an embryotic stage. The author suggests to draw on constructivism to inform KM theory and advises KM researchers to draw on a mixed research methods approach to maintain necessary flexibility to detect what KM is and how knowledge can be managed.

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