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Infusing Ethical Considerations in Knowledge Management Scholarship: Toward a Research Agenda

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Abstract

The authors of this paper believe that scholarly work on knowledge management (KM) has largely overlooked ethical considerations. As such, this paper argues for the infusion of ethical considerations into knowledge management (KM) research. Using the lens of the classical ethical theories in philosophy, this paper revisits key areas of KM—knowledge creation, storage and access, transfer, and application—and generates relevant research questions in each of these areas. The paper highlights the importance of examining ethical issues related to KM, and offers an illustrative set of ethically-informed research themes and questions that can potentially be investigated by future studies.

Keywords: Ethics, Knowledge Management, Research Agenda.

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Infusing Ethical Considerations in Knowledge Management Scholarship: Toward a Research Agenda

1. Introduction

Knowledge has been viewed as a key organization resource that firms and their business associates need to leverage in order to gain sustainable competitive advantage (Kankanhalli, Tan, & Kwok-Kee, 2005). Knowledge management (KM)¹ has been, and continues to be, an important area of investigation in the information systems (IS) discipline. The study of KM is an inherently socio-technical enterprise—at the confluence of human beings and technology (Alavi & Leidner, 2001; Schultze & Leidner, 2002; Meso & Smith, 2000). Extant literature has thus far focused on multiple social, organizational, and technological factors that are relevant to KM: from trust (Lee & Choi, 2003) to culture (Bennett & Gabriel, 1999), organizational structure (Lee & Choi, 2003), and IT support (Leonard-Burton, 1995).

Noting that KM is a socio-technical phenomenon, and given the observation that ethical considerations are paramount in any socio-technical system (Chatterjee, Sarker, & Fuller, 2009a; Mingers & Walsham, 2010), we believe that ethical considerations² can be fruitful in furthering KM research in the IS discipline. This paper elaborates how such a research agenda (consisting of a set of research themes and illustrative research questions) in the KM field can be pursued. In effect, this paper draws its motivation from the observation that KM discourse has largely not considered ethics, a pattern that seems to plague many areas of the IS discipline (Bryant, Land, & King, 2009). Through this paper, we seek to begin addressing this limitation.

The paper proceeds as follows. In Section 2, we discuss why ethics is a relevant lens of inquiry for KM-related phenomena. In Section 3, we discuss the three classic perspectives of ethics in order to conceptualize our inquiry into KM-related phenomena. Section 4 justifies the use of these three classic perspectives of ethics. Following that, in Section 5, we revisit the research agenda (for KM) raised by Alavi and Leidner's (2001) seminal work. Their prescribed research agenda forms the foundation for generating a set of research themes informed by ethical considerations. We use the three classic perspectives of ethics in order to elaborate on these themes for each of the focal areas of KM. Finally, in Section 6, we articulate the contribution of this work and call for a greater inclusion of ethics within the KM arena and also the field of IS in general.

2. Motivation

The motivation for this paper is based on three distinct arguments. The first argument recognizes the close link between ethics and knowledge. With the second argument, we highlight the relevance of ethical considerations in each KM activity—knowledge creation, knowledge storage and retrieval, knowledge transfer, and knowledge application. With the third argument, we observe that, even though prior KM research acknowledges ethical implications, there has been a lack of systematic and explicit inclusion of ethics and ethical considerations in KM research. We discuss these motivations below.

¹ By KM here, we mean IT-enabled KM.

² We distinguish ethics from morality in this paper. Following Mingers and Walsham (2010, p. 834), "in common language, ethics and morality tend to have similar meanings but within philosophy a distinction is drawn, although not always strictly followed, in that morals or morality refers to particular beliefs or norms while ethics refers to the science or system of morals, or to a particular ethical code" (LaFollette, 2007; Singer, 1994; Ulrich, 2008).

Stahl (2008) argues that it is useful to differentiate between ethics and morality, even though, according to him, treating them synonymously may not be necessarily incorrect. According to Stahl (2008), one possible way to distinguish between ethics and morality is as follows. Morality can be considered to be "the set of factually recognized norms that govern individual and collective behavior" (Stahl, 2008, p. 146). Ethics "provides the theoretical framework of these norms" (ibid, p. 146). The difference between ethics and morality may also be viewed from a different perspective where ethics subsumes the goals of a community (Stahl, 2008) and "morality...is understood as a set of rules...subordinate to ethics and...a means of facilitating the ethical aims of a community" (ibid, p. 146). Whichever way we look at this distinction, it is clear that ethics can best be understood as the theoretical justification of morality, a notion in alignment with Mingers and Walsham (2010). This is the view that this paper subscribes to. Consequently, theories of ethics are used as the basis for this paper.

2.1. Relation between Ethics and Knowledge

First, to demonstrate that ethics is an integral part of KM, we start with Chatterjee et al.'s (2009a) observation, based on Churchman (1971) and Courtney (2001), that there has been a long-standing philosophical view that knowledge is inherently related to ethics. Courtney (2001) notes that philosophers throughout the centuries have recognized knowledge and ethics as being synonymous—to be ethical is to be knowledgeable and to be knowledgeable is to be ethical—and that knowledgeable actions are based on ethical values. Epistemology (the philosophical study of knowledge) defines knowledge as justified true belief (Davidson, 1986)³. Often, epistemological concepts are implicitly connected to ethical ones because an important focus of epistemology is on good beliefs (Zagzebski, 1996). As Chisholm (1956, p. 447, cited in Zagzebski, 1996) reiterates, “some of the properties which many philosophers have thought peculiar to ethical statements may be seen also to belong to epistemic statements”.

Other authors have also supported this notion. As Morse (1999) notes, Aristotle (1985), in his work *Nicomachean Ethics*, advanced the idea that, in order to be ethical, one has to possess both theoretical and practical knowledge⁴. Further, ethics reflects what human beings consider important in life (Friedman, Kahn, & Boring, 2006), and is substantially dependent upon human interests and desires (ibid). These human beings are in a particular situation or context. So, in order to be ethical, one has to gain a complete knowledge of individuals, contexts, and situations because we cannot be ethical through incorrect or incomplete ontology and epistemology (Chatterjee, Sarker, & Fuller, 2009b). In fact, as highlighted by Spinoza's celebrated work *Ethics* (1677/1985) centuries earlier, ethics essentially draws on knowledge based on reason and understanding (we discuss Spinoza later in the paper).

However, we should also acknowledge here that this position, on the close link between ethics and knowledge, is not above debate. Indeed, the two strands of philosophers—cognitivist and non-cognitivist⁵—highlight the divide concerning how ethics and knowledge are related. The former (cognitivism) relates to our above stance that knowledge and ethics are related. On the other hand, non-cognitivism—the major trend of which has been emotivism (Loobuyck, 2005)—argues that they are not. The non-cognitivist philosophers, who partly derived their inspiration from Wittgenstein's early work (such as *Tractatus*), argue that knowledge on how to act ethically is impossible because “ethical judgments have no descriptive validity or cognitive meaning” (Loobuyck, 2005, p. 384). The major premise driving the emotivist (or noncognitivist) school of thought was the perceived gap between fact and value (what is also called the “is-ought” divide). For example, Loobuyck (2005, p. 384) cites Ayer's position as follows:

The presence of an ethical predicate in a proposition adds nothing to its factual meaning or content”. “The function of ethical words is purely ‘emotive’, either to express a feeling, or to arouse a feeling in others sometimes to the point of having the effect of a command (Ayer, 1936, p. 108).

Because of this emotivist notion that ethical judgments are “expressions or excitants of feeling” (c.f.

³ We should note here that a justified belief may not be necessarily true. According to Kornblith (1983), a belief is justified when it is a logical outcome of a reasoning process. A justified belief may not necessarily be true because it can also be a product of unreliable reasoning processes on the part of the agent. For the justified belief to be true, the related process (of arriving at the belief) should be reliable and responsible. In Kornblith's words, “if one wishes to explain why *justified beliefs are likely to be true*, one must appeal to the reliability of our innate endowment” [emphasis added] (p. 46). A belief, in order to be true, requires the agent to “self-consciously instill in oneself a certain circumspection in circumstances where a mistake is likely to occur, such as in emotionally charged situations” (Kornblith 1983, p. 38). In other words, being responsible and engaging in a reliable process (with suitable introspection) is needed to generate a belief that is both justified and true.

⁴ However, Aristotle himself does not treat knowledge as the only precondition that gives rise to virtues (ethicality). There are also other factors involved. Indeed, in the same vein, Morse (1999) states “I point to Aristotle's objection to Plato, which shows that theoretical knowledge of ethics is not sufficient for making a person ethical, because ethics requires both theoretical and practical knowledge” (p. 693). It is therefore quite clear that merely having theoretical knowledge may not automatically render an entity ethical—a notion that Aristotle himself subscribed to.

⁵ Cognitivist ethicists argue that ethical judgments can be objectively true since they are based on real, objective facts (Levit, 1963; Loobuyck, 2005). This is contested by the non-cognitivists, who reject such a scientific notion of ethics and claim that ethical judgments contain an “emotive” or “attitudinal” component which cannot be *logically* justified by the procedures, findings, and criteria of modern science” (i.e., through empirical knowledge) (Levit, 1963, p. 304).

Levit, 1963, p. 304), it is pointless to ground them in empirical knowledge. For example, philosophers, notably in the emotivist tradition, which is propounded by renowned ethicists such as A. J. Ayer, R. M. Hare, and C. L. Stevenson⁶, argue that “ethical knowledge is impossible” (Mackenzie, 1998, p. 1395). This perspective holds that empirical knowledge does not lead to any conception of what we should do in order to act ethically (Mackenzie, 1998)⁷. However, while the non-cognitivist movement was dominant during the early part of the 20th century, it gradually weakened thereafter, with the effect that there was a distinct shift amongst philosophers toward cognitivism (Loobuyck, 2005). As Levit (1963, p. 304) states:

In the last fifteen or twenty years, many analytically oriented philosophers have moved away from a “pure emotive” meta-ethics. In general they no longer claim that moral judgments are merely “expressions or excitants of feeling”. They pay more attention to evaluating certain logical operations in moral arguments.

Along these lines, Loobuyck (2005) argues that “philosophers such as Foot, Lovibond, McDowell, and Putnam point out that non-cognitivism [emotivism] is built upon the imaginary wide gap between fact and value” (p. 385); in other words, according to this group of philosophers, the “is-ought” divide may be less than what the emotivists previously theorized. Therefore, there is value in stressing the need for empirical inquiry (knowledge about “is”) in determining ethicality (“ought”), much as Brady (1986) notes that “the object of ethical inquiry is knowledge” (p. 338). Therefore, while acknowledging that certain strands of philosophy do argue that knowledge and ethics may not be closely related, more recent philosophers disagree with this view. This paper subscribes to this latter view that ethics and knowledge are indeed closely related.

The close link between ethics and knowledge is also found in the works of recent authors on information ethics (IE) such as Floridi (captured by Hongladarom, 2008, p. 176-177):

What is the best strategy to construct an information society that is ethically sound? This is the question I wish to discuss in this paper. Let me anticipate my conclusion. The task is to formulate an information ethics that can treat the world of data, information, knowledge and communication as a new environment, the infosphere. This information ethics must be able to address and solve the ethical challenges arising in the new environment on the basis of the fundamental principles of respect for information, its conservation and valorization.

The above quotation representing Floridi’s view suggests that the creation of an ethically sound society requires the careful consideration of data, information, and knowledge. A society becomes ethical through the “fundamental principle” of respect for information, which the above quote notes. Given that information is a key basis for knowledge, we can therefore infer that being ethical entails respecting the role of knowledge, which creates a close link between the two. Hongladarom (2008) further highlights the point that Floridi’s IE, as acknowledged by Floridi himself, is close to Spinoza’s views. Both of them are ethical naturalists in that the conception of good or bad corresponds to actual reality (ibid).

According to Spinoza, “what we *know* certainly is a means by which we may approach nearer and nearer to the [perfect] model of human nature” (emphasis added) (Spinoza, 1677/1985, p. 545, c.f. Hongladarom, 2008, p. 179). For Spinoza, therefore, there is a perfect (good) model of human nature; any means to that perfect model is good, and we should know these means. In other words, we may conclude through a reading of Spinoza’s and Floridi’s works that, in order to be ethical, we must possess knowledge of the means to be ethical, which indicates a close link between knowledge and ethics.

⁶ A detailed discussion of the emotivist movement in philosophy is beyond the scope of this paper. The reader is referred to the well-known works of these authors for a detailed view of this philosophical trend.

⁷ This viewpoint is similar to that proposed by Wittgenstein who influenced this emotivist trend (Jacobsen, 1996). As Loobuyck (2005, p. 384) notes: “In the Tractatus (6.41) Wittgenstein writes that ‘in the world everything is as it is and happens as it does happen. In it there is no value and if there were, it would be of no value’. The facts are just the facts, and since propositions merely express facts about the world, propositions in themselves are entirely devoid of value [ethics]”.

2.2. Ethics and Major Activities in KM

Second, apart from the argument that ethics is deeply related to knowledge, the relevance of ethics to KM is highlighted if we closely investigate the major activities in the domain of KM. These include knowledge creation, knowledge storage and retrieval, knowledge transfer, and knowledge application (Alavi & Leidner, 2001). Knowledge creation, especially tacit knowledge creation, is strongly contingent on socialization processes (Nonaka, 1994). Such processes are “inherently vulnerable to various distortions arising from the use of expert, structural, or other forms of power, peer pressure, and efficiency imperatives, real or imagined” (Hirschheim & Klein, 1989; Hirschheim & Newman, 1991; c.f. Chatterjee et al., 2009a, p. 142). Such distortions inhibit knowledge creation and a consideration of ethics can remedy this.

In the case of knowledge storage and retrieval, there are key concerns such as privacy of information, confidentiality of information, access to information, security of information, and accountability of information, all of which are important ethical considerations (Friedman & Kahn, 2003; Friedman et al., 2006). As Nemati, Steiger, Iyer, and Herschel (2002) note, designing a KM warehouse architecture requires ethical considerations. So, it is strongly evident that knowledge storage and retrieval have distinct ethical connotations.

Considering knowledge transfer, we again come across key ethical considerations. As found by Pan and Leidner (2003) in their case study of Buckman Labs, employees often shirked from transferring knowledge to one another because “they [did] not know what [was] right and what [was] wrong” (p. 78). Consequently, the employees had to be subjected to a code of ethics in order to facilitate knowledge transfer between them (ibid). Again, Lin (2007) notes, the employees’ willingness to engage in knowledge transfer was found to be influenced by perceptions of justice; or in other words, it was related to the notion of fairness and ethics. Bock, Zmud, Kim, and Lee (2005) reiterate this point by noting that such fairness (ethical) considerations have an important influence on intention of knowledge sharing and transfer.

Finally, let us consider the issue of knowledge application. Knowledge application refers to an organization’s capability to use the knowledge at its disposal for the betterment of its operations and, presumably, to increase its economic performance and gain a competitive advantage (Alavi & Leidner, 2001). Since economic success is achieved through ethical considerations—as Culnan and Williams (2009) note, “ethics is good business” (p. 682)—knowledge application (whose aim is to bolster economic performance) can benefit from ethical considerations. Indeed, prior literature notes that organizational virtues (i.e., ethical characteristics of organizations) promote success in terms of “profitability, productivity, innovation, quality, customer retention, and employee loyalty” (Caza, Barker, & Cameron, 2004, p. 174) because ethical orientations often enhance creativity and innovation in work processes (Dutton, Roberts, & Bednar, 2010). Firms with ethical orientations create more market value (Mackey, Mackey, & Barney, 2007) due to the legitimacy built by such ethical considerations (Surie & Ashley, 2008). In summary, since knowledge application inherently deals with normative issues such as how, why, and when to apply knowledge, its link to ethics, an inherently normative consideration (Hasnas, 1998; Bishop, 2000), is evident.

Based on the discussion above, we can say that ethics is relevant as a philosophical foundation for KM (Spender & Scherer, 2007). In the IS literature, prior works further illuminate the relevance of ethics to KM. For example, Holsapple and Joshi (2004, p. 608) note that “crucial issues facing researchers and practitioners include *ethical issues in managing knowledge*” [emphasis added]. It is relevant to note that Holsapple and Joshi’s (2004) development of KM ontology subsumes important ethical considerations. Based on their work, we can argue that many issues in KM—such as knowledge generation, ownership, acquisition, storage, manipulation, application, and impact—are rendered incomplete if we do not incorporate ethical considerations in KM research and practice. Not surprisingly, there have been calls for instilling ethics into KM (e.g., Holsapple & Joshi, 2000).

2.3. Ethics and Prior KM Research

However, a review of past KM research in the IS discipline reveals limited explicit and systematic understanding of ethical considerations. While there are certainly works that discuss the relevance of ethics to KM (e.g., Courtney, 2001; Chae, Paradise, Courtney, & Cagle, 2005; Richardson, Courtney, & Haynes, 2006; Holsapple & Joshi, 2004), by and large, the field of KM research has not seen a thorough and systematic consideration of how ethics can further the field of KM. In fact, we conducted a search on the AIS Basket of 6 journals (*MISQ*, *ISR*, *JMIS*, *J AIS*, *EJIS*, *ISJ*) using the keywords such as ethics/ethical and knowledge management. We did not find any study devoted to investigate the link between ethics and knowledge management, which validates our initial conjecture regarding the gap in the literature. As an aside, it should be noted that this malady is not symptomatic of just KM research in IS, but also the entire body of IS research (Bryant et al., 2009; Mingers & Walsham, 2010). Motivated by such a gap in the existing literature, this paper offers ideas and suggestions on how we may start incorporating ethical considerations into KM research.

3. Review: Ethical Theories in Philosophy

Having argued the relevance of ethics to KM, we now discuss the theories of ethics in order to create the groundwork for developing our research agenda for ethical KM. Chatterjee et al. (2009a) note that classical ethical theories fall into three distinct streams: consequentialist ethics, deontological ethics, and virtue ethics. We present a discussion of the three theories below.⁸

Two major schools of ethics are the consequentialist and the deontological schools. The consequentialist school of thought was founded on the works of Bentham (1789/1970) and Mill (1861/1979). These works argued that the rightness of an action is determined by how much hedonistic⁹ consequential benefit (maximizing pleasure and minimizing pain) results from the action. Later consequentialists (e.g., Moore, 1903/1959) included non-hedonistic outcomes (such as money, safety, and material wealth) in order to further refine the theory of consequentialism, arguing that maximizing such positive consequences can also be considerations to determine the rightness or wrongness of an action. This trend of focusing on non-hedonistic benefits in consequentialist theory seems to be evident in the work of more recent philosophers, policy makers, and economists. For example, the Nobel Prize-winning economist Amartya Sen (1979) argued that “welfarism”—being concerned with human or social welfare—should be a more fundamental aspect of this theory, a notion supported by Goodin (1995). Thus, it is evident that modern notions of consequentialism have moved beyond the purely hedonistic considerations proposed by Bentham or Mill, but that the core idea of maximization of benefits or outcomes still remains the critical consideration of consequentialist theory.

This idea of consequentialism allows us to identify positive consequences in certain scopes and contexts, and accordingly to determine if an act results in those outcomes (thus making it ethical). With respect to information systems and its impact on organizations, for example, certain positive consequences (with an ethical connotation), such as employee welfare (e.g., Robey & Sahay, 1996), work achievement (e.g., Orlikowski & Robey, 1991), and quality of work life and employee commitment (e.g., Igbaria, Parasuraman, & Badawy, 1994) have been discussed in prior literature.

In contrast to the consequential school, the deontological school of ethics argues that an action is right if it follows certain rules that are in place. Such rules represent duties to respect another individual's rights, and need to be followed. Conformance to these rules ensures that an act is ethical. Immanuel Kant, a primary proponent of the deontological school, expressed these rules in the form of three categorical imperatives (1804/1994):

- “Act only according to that maxim whereby you can at the same time will that it should become a universal law” (p. 30).

⁸ Material in this section has been partly adapted from past work by the first author and his collaborators (Chatterjee et al., 2009a; Chatterjee et al., 2009b)

⁹ Hedonism posits that pleasure is intrinsically good (Sinnott-Armstrong, 2006).

- “Act in such a way that you treat humanity, whether in your own person or in the person of another, always at the same time as an end and never simply as a means” (p. 36)
- “Every rational being must so act as if he were through his maxim always a legislating member in the universal kingdom of ends” (p. 43).

There have been many philosophers who have contributed to the deontological school of thought that developed from Kant's ideas. Perhaps one of the most notable was John Rawls, who, in his influential theory of justice (1971), forwards a deontological view of justice based on the following fundamental principles (c.f. Robin & Reidenbach, 1987, p. 46):

1. “Each person is to have an equal right to the most extensive basic liberty compatible with similar liberty for others” (Rawls, 1971, p. 60).
2. “Social and economic inequalities are to be arranged so that they are both
 - (a) reasonably expected to be to everyone's advantage, and
 - (b) attached to positions and offices open to all” (Rawls, 1971, p. 60).

Rawls' first principle is referred to as the principle of liberty. It basically translates to issues such as freedom of speech (expression), freedom of political liberty, and so on. The first part of the second principle is also called the difference principle, and implies that social and economic inequalities should be rearranged to benefit everyone, especially the least-advantaged members of society. The second part of the principle is called the principle of fair equality of opportunity, which basically implies that everyone should receive equal opportunities in society. The two parts of the second principle are often referred to as separate principles.

Following such deontological work (especially of Kant and Rawls), prior research has outlined deontological values that should guide our action in order for it to be termed as ethical. Such values are ethical because actions based on them uphold our duties to promote basic human dignity in a social system, a key consideration in deontological ethics. Table 1 presents some deontological values that have been discussed in prior works—consistency, accountability, equality, freedom of expression (Chatterjee et al., 2009a), and respect for an individual's autonomy, privacy, and security (Friedman et al., 2006). In sum, deontological ethics argues that there are certain universal and basic human values that should be upheld (equality, freedom of expression, accountability, etc) and that rules of action should follow from our duty to uphold such basic human values.

Table 1. Some Deontological Values discussed in Prior Literature (Adapted from Chatterjee et al., 2009a; Friedman et al., 2006)

Deontological values	Definition/description
Consistency	Actions should be universally consistent with respect to all human beings.
Equality	There should be equal access to resources and opportunities for all human beings.
Freedom of expression	Human voice and opinion should be encouraged and actively sought.
Accountability	Actions of a person, people, or institution should be uniquely traceable to the person, people, or institution.
Respect for an individual autonomy	One should recognize human beings as being inherently valuable and not a means to an end.
Privacy	The individual should have the right to determine what information about himself or herself can be communicated to others.

Apart from these theories, which are essentially act-centered (because they focus on how one should act ethically), there is a third line of thought that focuses more on the doer of the act, rather than the act itself. This third line of ethical thought draws from the works of Aristotle and thus predates these more modern ethical thoughts. Called virtue ethics (O'Neill, 1996; Hursthouse, 1999), it judges not the ethicality of actions but rather the ethicality of agents. Virtue ethics draws originally from the works of the Greek philosopher Aristotle, who in his well-known work *Nicomachean ethics*, described certain characteristics or "virtues" agents of action should have: courage, honesty, compassion, and so on. MacIntyre (1985) defines a virtue as "an acquired human quality the possession and exercise of which tends to enable us to achieve those goods which are internal to practices and the lack of which effectively prevents us from achieving such goods" (p. 191). Thus, while the focus of act-based ethical theories (i.e., consequentialism and deontology) is on actions themselves, the focus of virtue ethics is on how one can be a good agent in a context or a community of practice (MacIntyre, 1985).

In virtue ethics, there is a conceptual shift from "doing" to "being" (Louden, 1986)—it emphasizes the idea that we should concentrate on "being" good persons instead of "doing" good acts. In the act-based schools of ethics, ethicality of an individual is derived from the action—a person is good if s/he acts in a certain way (Triantosky, 1990). However, virtue ethics holds that it is a good agent that performs an ethical act (ibid). For example, an agent having the virtue of courage will not bow to unjustified pressure from others (Hartman, 1998). Virtue ethics takes the stance that ethicality "is best analyzed by beginning with a conception of virtue and character" (Taylor, 1991; Hursthouse, 1999, c.f. Harman, 1999, p. 318) and "an act is morally right to the extent that it is the result of the agent's good character" (ibid, p. 318)¹⁰.

Virtues exist both at the individual level (e.g., Solomon, 2003, 2004; McKenna, Rooney, & Boal, 2009; Brown, Treviño, & Harrison, 2005) and at the organizational level (Collier, 1998; Whetstone, 2001; Moore & Beadle, 2006; Chun, 2005). While the latter may seem odd at first sight, literature has in fact proposed that organizations do have character and identity, and thus virtues (Pruzan, 2001). In fact, as Pruzan (2001) argues, such organizational virtues strongly contribute toward the identity of the organization. Furthermore, this is completely consistent with MacIntyre's (1985) view of the virtues being situated in a community of practice, in this case the community of practice being an organization. A community of practice socializes individuals in understanding what virtues need to be practiced and what vices need to be avoided (Limbs & Fort, 2000). A review of prior literature reveals the following often-mentioned virtues at the individual level and/or organizational level: integrity and zeal (Chun, 2005), conscientiousness (Brown et al., 2005), empathy (Murphy, 1999), and courage (Harris, 2001). Table 2 lists some of the virtues that have been mentioned in prior literature and are useful within the scope of this paper.

Philosophers hold that the above classical perspectives of ethics are quite radically different from each other (Chatterjee et al., 2009a). This explains why, in this paper, we use each of these ethical theories in order to develop our research agenda for KM. It should be noted that the focus of the paper is not to justify one particular ethical perspective (it is a philosophical debate that has raged through centuries), but rather to showcase why ethics should be an important consideration to KM, and thus to draw attention of the IS academic community to this issue¹¹.

¹⁰ It should be noted that virtue ethics holds that ethical action is the outcome of an agent's good character. However, some authors contest this "agent-induced" view of change. For example, Trist's work (e.g., Trist, Susman, & Brown, 1977) focuses on how teams can manage themselves without such an agent of change (i.e., a leader). Mumford (2006) also contends that major changes of humanistic value systems will "come from a shift of values resulting probably from a severe shock of some kind" (p. 340). In other words, according to these scholars, events, and not agents, create value (ethical) changes. Nevertheless, within the IS literature, the agent-induced ethical change has been more popular (e.g., Hirschheim & Klein, 1989). This, and the recent interest of scholars in virtue ethics, prompted us to include virtue ethics in our discussion in this paper.

¹¹ One premise that drives this paper is that differing ethical perspectives may provide completely different insights and solutions in the same situation. In our paper, we stay clear of adjudging what might be the appropriate solution in a particular case. Such solutions would be provided through empirical studies that the research questions proposed here hope to inspire. For example, an empirical study might show that the virtue perspective may be more applicable than the deontological perspective in a given context; however, it is impossible to offer such comparisons for the general case.

Table 2. Some Possible Virtues Applicable to Individuals/Organizations

Virtue	Definition/description
Integrity	This virtue is defined “as a reputation for trustfulness and honesty” (Butler & Cantrell, 1984, c.f Chun, 2005, p. 271).
Zeal	This virtue is defined as the ability to be exciting, innovative, and imaginative (Chun, 2005)
Conscientiousness	This virtue implies being careful, reliable and responsible (Brown et al., 2005)
Empathy	This virtue is defined as the “being aware of and sensitive to the needs and concerns of others” (Murphy, 1999, p. 113) and reflects a concern and interest for the well-being of others (Sarin & McDermott, 2003)
Courage	This virtue “involves the capacity to cope with difficulties and dangers, and not to be discouraged by them or be unduly fearful of them” (Mahoney, 1998, p. 188) and “the capacity to do what one judges is ethically called for in spite of one’s instinctive reaction to the perceived dangers and difficulties in which such an action will result” (ibid, p. 189).

4. Justifying The Use of These Three Ethical Theories

Our choice of the ethical theories is guided by Mingers and Walsham’s (2010) recent work, which suggests that the deontological, consequentialist, and virtue ethics are the three major conceptual strands of business ethics. As they note, these are:

the three general types of ethical approaches—consequentialism, deontology, and virtue ethics and communitarianism—although each has a degree of variety within it (Donaldson & Werhane, 1999; Pojman, 1995). There are other approaches, for example, the ethics of care (Gilligan, 1990), but there is general agreement (Baron, Pettit, & Slote, 1997; LaFollette, 2007) that these are currently the main approaches and they certainly cover virtually all areas of business ethics” (ibid p. 834). It has been noted that these three theories “are the dominant theories currently discussed and they capture much of our moral intuition (Stahl, 2012, p. 641).

Indeed, while information ethics is a rich stream of scholarship, a review of the information ethics literature reveals that most works draw on these classic theories of ethics. For example, Ess’ (2006) conception of global information ethics and the “ethical pluralism” that characterizes such an inquiry draws upon Aristotle’s ideas, especially his idea of phronesis or practical wisdom (Ess, 2006). Further, Ess and Thorseth (2008) argue that Kant’s work is “central and relevant” to the current phenomenon of globalization via ICTs (p. 211).

Floridi’s information ethics or IE (Floridi, 1999, 2002), at first sight, may seem different from the above theories. As Floridi (1999) notes:

IE is not an ethics of virtue, happiness or duty, but of respect and care (the respect for the patient and the agent’s care). According to IE, sometimes the right question to be asked is not “what ought I to be?” nor “what ought I to do?”, but “what ought to be respected or improved?”, for it is the “what’s” welfare that may matter most (p. 49).

However, upon closer scrutiny of Floridi’s later works (e.g., Floridi, 2005), we see that his IE (specifically his notion of moral accountability and agency) builds on Kant’s conception of moral responsibility, while relieving itself from Kant’s anthropocentric assumptions. In other words, Floridi’s IE may be seen (at some level at least) as translating or modifying Kant’s conceptions of responsibility to a nonhuman (e.g., technology). Therefore, the links of Floridi’s IE to Kant are still evident. Notably, Hongladarom (2008, p. 177) highlights the close link between Floridi and Kant:

“Floridi’s argument as to why it is the case that the amount of information there is, or what he calls the infosphere, should be accorded intrinsic ethical value is *Kantian in spirit*” [emphasis added]. It is also worth mentioning that Floridi’s attribution of agency to elements that are nonhuman is consistent with current extensions of Aristotle’s virtues (e.g., Coleman, 2001). It may thus be seen that Floridi’s notion of agency builds on Kant’s perspective, while also acknowledging the ethical agency of nonhuman objects, which makes it closer to Aristotle’s perspective of virtuous agents. Likewise, this resemblance between Kant and Floridi’s positions can be interpreted from the following quote by Floridi:

Things have various degrees of intrinsic value and hence demand various levels of moral respect, from the low level represented by an overridable, disinterested, appreciative and careful attention for the properties of an information object like a customer profile to the high-level, absolute respect for human dignity (c.f. Capurro, 2006, p. 182)

In summary, Floridi’s works appear to draw salient ideas from both Kant and Aristotle.

Turning to other noted scholars in this stream, Capurro (2006) argues that the Heideggerian concept of “Dasien” (therebeinghood) goes beyond humans, thereby implying that nonhuman objects occupy a moral space and exhibit moral agency. This view has similarities with the notion of virtuous agents in Aristotle’s virtue ethics (Coleman, 2001). Likewise, Introna’s disclosive ethics (2005), which notes the possibility of ethical values (e.g., transparency or opacity) being inscribed in information technologies, seems aligned with the deontological school of thought (Chatterjee et al. 2009a). Finally, one can find the concept of “just consequentialism” (Moor, 1999, p. 65), which draws on the consequentialist perspective, and “emphasizes consequences of policies within the constraints of justice” (ibid, p. 65).

Based on the above discussion, we find it reasonable to infer that the classical ethical theories can serve as the foundation for much of the research on ethics related to information and IT, which makes our focus on classical ethical theories relevant and justifiable.

5. Furthering KM Research Through Ethics

Having articulated the perspectives of ethics that we draw on, we now show how these perspectives can contribute to KM research. In this paper, following the advice of Webster and Watson (2002), we not only present a “state-of-the-art” discussion of ethics in the context of knowledge management, but also charter a path for future research. We do this by articulating key research themes at the intersection of ethics and KM. The discussion of these research themes lead to illustrative research questions at the end of each theme.

Before moving forward, we should discuss our starting point. The set of research themes and questions we highlight here is informed by Alavi and Leidner’s (2001) well-known map for guiding KM inquiry in the IS discipline. Drawing from their work, we first identify key foci of KM research, those of knowledge creation, knowledge storage/access/retrieval, knowledge transfer, and knowledge use/application. We take these foci of inquiry as our starting point, and interpret each of these areas through the lens of each of the three classical ethical theoretical perspectives, thereby giving rise to each research theme. Table 3 summarizes the KM research foci and their corresponding ethical research themes.

We should hasten to add that the research themes and questions here should be treated as illustrative and not exhaustive. There certainly are other ethically informed research themes/questions beyond the ones presented in this paper that could further the KM line of inquiry. Ethics is a matter of on-going discussion and debate. Consequently, we do not create a comprehensive list of ethically informed research themes and questions; instead, we showcase how ethical considerations might be infused into KM research. In fact, we hope that this paper will influence our academic colleagues to develop additional ethically informed research themes and questions, and to undertake empirical work to investigate the questions. We now discuss the research themes and related questions in Section 6 (See Table 3 for the summary).

Table 3. Research Themes and Illustrative Research Questions

Foci in knowledge management (from Alavi & Leidner 2001)	Ethical perspective	Corresponding research theme	Possible research questions (illustrative, not exhaustive)
Knowledge creation	Deontology	Relevance of IT-enabled deontological values to knowledge creation	Do certain characteristics of IT (as part of a KMS) promote/inhibit certain deontological values? What effect does the promotion/inhibition of such deontological values have on knowledge creation?
	Virtue	Role of virtuous agents in knowledge creation	Do virtues characterizing knowledge agents promote knowledge creation? If so, how?
	Consequentialist	Positive effects (consequences) of knowledge creation	What are the effects of knowledge creation on organizational positive orientations?
Knowledge storage/ access/retrieval	Deontology	Relevance of deontological values to storage, access, and retrieval of knowledge in a KMS	What deontological values are applicable to a knowledge storage, retrieval, and access context (especially in terms of procedures and techniques that can promote such values)? Can such deontological values conflict with economic success? If so, how can such conflicts be resolved?
	Virtue	Virtues relevant to access and retrieval of knowledge	What organizational or individual virtues can influence proper storage, access, and retrieval of knowledge within a KMS? How can such virtues be developed within an organizational community of practice? Can such virtues sometimes conflict with considerations of knowledge storage/access/retrieval for business success? If so, how can such conflicts be resolved?
	Consequentialist	Ethical consequences relevant to access of stored knowledge	What are the effects of access to stored knowledge? How can storage/access/retrieval techniques be designed to promote positive consequences?
Knowledge transfer	Deontology	Relevance of IT-Enabled deontological values to knowledge transfer Relevance of organizational norms or codes (deontological) to knowledge transfer	Do certain characteristics of IT-based KMS promote/inhibit certain deontological values (e.g., freedom of expression); what effect does the promotion/inhibition of such deontological values have on knowledge transfer? Do organizational-level deontological norms promote better knowledge transfer using a KMS?
	Virtue	Virtues relevant to knowledge transfer	Does the practice of virtues, both at the organizational or individual level, promote knowledge transfer; what virtues are relevant in this regard and how do they promote knowledge transfer?
	Consequentialist	Positive/negative impacts of knowledge transfer	What positive/negative effects (drawing from Positive Organizational Scholarship) can knowledge transfer produce in organizations?
Knowledge application	Deontology	Deontological values relevant to knowledge use/application	What is the relationship between deontological values and knowledge use/application? Specifically, do deontological values facilitate knowledge use/application? Are there tensions between such deontological values and certain instances of how knowledge is used/ applied? If so, how can such tensions be resolved?
	Virtue	Virtues/vices as a result of KMS use	Does the use of KMS lead to the creation of organizational virtues and vices?
	Consequentialist	Consequences of KMS use	What ethical consequences (for an individual and an organization) can arise from use of KMS within an organization?

5.1. Ethical Considerations in IT-Enabled Knowledge Creation

5.1.1. Research Theme 1: Relevance of IT-Enabled Deontological Values to Knowledge Creation

Within this theme, we call for an investigation of whether certain characteristics of IT (e.g., the knowledge management system or KMS) can promote/inhibit certain deontological values and what effect the promotion/inhibition of such deontological values have on knowledge creation. Approaching this issue from an ethical perspective, we propose that it would be worthwhile to investigate whether certain communication media (due to their various media properties) give rise to better (or worse) knowledge creation due to their (media's) inherent promotion/inhibition of certain deontological values. For example, prior literature (e.g., Carlson & George, 2004; Dennis, Fuller, & Valacich, 2008; Chatterjee, 2007) has argued that media characteristics can promote unethical behavior such as deception. Deception is an unethical behavior violating deontological values such as consistency and respect for an individual's autonomy. Deception may be seen to have a detrimental influence on knowledge creation (Castelfranchi, 2004). On the other hand, arguing based on the interpersonal deception theory (Buller & Burgoon, 1996), deception (whether detected or not) may have unforeseen consequences, such as giving rise to new unintended biases (Darke & Ritchie, 2007) and thus to other unintended forms of knowledge being created.

Further, deontological values such as freedom of expression and availing of equal opportunity to contribute are core enablers of knowledge creation (Lee & Choi, 2003). Here, for example, one might investigate whether the extent of media synchronicity (Dennis et al., 2008) promotes espoused deontological perspectives such as freedom of expression or equal opportunity to participate. One can conjecture that a communication media with high synchronicity (e.g., video conferencing) might promote better scope for expressing one's ideas, which may ultimately facilitate better exchange of ideas and thus more authentic and more representative knowledge creation. In this context, we should add that prior research (e.g., Chatterjee et al., 2009a; Friedman et al., 2006) has argued that it is possible to design and adopt IT in such a way so as to promote deontological values.

We thus believe that future research should focus on distilling what deontological values are relevant to this context of knowledge creation using IT, investigating how certain IT (i.e., the KM system or KMS) features can promote/inhibit such values, and determining what impacts such values can have on knowledge creation. The following research questions illustrate this research theme:

RQ1a: *Do certain characteristics of IT (as part of a KMS) promote/inhibit certain deontological values?*

RQ1b: *What effect does the promotion/inhibition of such deontological values have on knowledge creation?*

5.1.2. Research Theme 2: Role of Virtuous Agents in Knowledge Creation

Here, we call for an investigation of the presence of certain individuals with appropriate characteristics that can ensure the sanctity of knowledge created. Before we dwell on our conjectures, let us venture into the concept of "gatekeeping", which has become an important topic of inquiry in information and knowledge management. In the scope of knowledge management, we can define gatekeepers as "those who guard and preserve a community's information (Aganda, 1999; Metoyer-Duran, 1993) or [who act] as agents to gather and disseminate information" (Klobas & McGill, 1995; Sturges, 2001) (c.f. Barzilai-Nahon, 2008, p. 1494). Such gatekeepers operate a variety of functions in a community of practice, including adding information, manipulating information, channeling information, withholding information, and integrating information (Barzilai-Nahon, 2008).

Given this understanding of knowledge gatekeeping, it is not difficult to understand that such gatekeepers engage in certain activities in the organizational community of practice and that such actions have an important influence on an organization's knowledge creation. Hence, we argue that it would be worthwhile to investigate whether these gatekeepers should be endowed with certain

virtues. For example, integrity would probably be an important consideration for such gatekeepers. A gatekeeper who has such a virtue would probably encourage proper, conscientious, and relevant creation of knowledge in the context of a KMS. Further, drawing on Nonaka and Kono's work (1998), we can say that knowledge gatekeepers endowed with the virtue of zeal (associated with being imaginative or creative) may be useful to generate new knowledge. We thus call for future research to delineate such important virtues relevant to knowledge gatekeeping and how they can influence the extent of knowledge stored, modified, and applied via a KMS. The following research question is representative of such an inquiry:

RQ2: *Do virtues characterizing knowledge agents promote knowledge creation? If so, how?*

5.1.3. Research Theme 3: Positive Effects (Consequences) of Knowledge Creation

Related to this theme, we call for future research to investigate the positive effects of knowledge creation. An emerging stream of research called positive organizational scholarship (POS) supports this line of thinking. POS can be understood as:

an umbrella term that categorizes previous research and provides an organizing frame for current and future research on positive states, outcomes, and generative mechanisms in individuals, dyads, groups, organizations, and societies. The overarching emphasis of this work is on identifying individual and collective strengths (attributes and processes) and discovering how such strengths enable human flourishing (goodness, generativity, growth, and resilience; Fredrickson and Losada, 2005) (Roberts, 2006 p. 292).

As Fineman (2006, p. 270) notes, in positive scholarship, "hedonic emotional states, such as happiness, satisfaction, joy, pleasure, and optimism, merit special attention". Given that hedonism was a major theme in the development of the theory of consequentialism (Mill, 1861/1979), we can infer that the agenda of positive scholarship is well aligned with the consequentialist school of thought. Therefore, the consequential impacts of knowledge creation can be understood in terms of the concepts presented in POS.

An example of the above is found in Lee, Caza, Edmondson, and Thomke (2003), who show how the knowledge creation process gives rise to self-reinforcement in organizations. Others, such as Dutton, Glynn, and Spreitzer (2006), have shown how knowledge created in an organization has the ability to bring about positive changes, such as emotions, success, happiness, and so on, in organizational members. Following such arguments, we contend that it would be interesting to investigate the "positive" effects (from a POS perspective) of knowledge creation and how IT (i.e., KMS) can serve as a catalyst for such effects. Such lines of inquiry may be illustratively captured by the following research question:

RQ3: *What are the effects of knowledge creation on organizational positive orientations?*

5.2. Ethical Considerations in Knowledge Storage/Access/Retrieval

5.2.1. Research Theme 4: Relevance of Deontological Values to Storage, Access, and Retrieval of Knowledge in a KMS

Here, we call for future research to investigate the relevance of certain deontological values to storing and accessing knowledge. Storage and access issues in existing KMS inherently give rise to deontological considerations of security and privacy (Friedman et al., 2006). Further, (in-)accessibility is a key property of information objects (Floridi, 1999), which arguably applies to any KMS. This issue is further exacerbated in the context of many types of KMS, especially those that cater to the healthcare industry (Meslin & Quaid, 2004). For example, when a KMS stores sensitive medical data for a patient, should it be properly encrypted, and who should be able to access it? Should such KMS have

authentication techniques to prevent improper access? On the other hand, competing deontological values such as equal access to information present an inherent contradiction to the deontological values of privacy and security. So, in such cases, it becomes important to investigate which deontological values and their respective implementation into the KMS merit further consideration.

The relevance of deontological values to knowledge storage and retrieval is implied by Upadhyaya, Rao, and Padmanabhan (2006), who note that KMSs implement security methods such as password authentication, intrusion-detection systems, access control systems, and security policies due to issues of privacy in KMS (Chadwick, Olivier, Samarati, Sharpston & Thuraisingham, 2003). We argue that there are certain deontological values that may be inscribed into such security methods and techniques. For example, these methods and techniques can be designed while remaining faithful to deontological values such as privacy, access (Friedman et al., 2006), and consistency (Chatterjee et al., 2009a).

Knowledge retrieval also has other ethical (deontological) ramifications because deontological values such as privacy and autonomy of individuals can be easily compromised, especially in this age of data and knowledge mining (van Wel & Royakkers, 2004). Advanced data mining algorithms can search a vast amount of stored data for relevant patterns (Tavani, 1999; Holsheimer, 1999), which often causes data mining to lead to discriminatory practices (e.g., by “mining” the differences between men and women on a variable of interest) (van Wel & Royakkers, 2004). This would be a violation of the deontological value of equality.

We contend that if such retrieval and mining algorithms incorporate certain deontological values (e.g., privacy, equality, or autonomy), then such concerns might be mitigated to some extent. As an example, van Wel and Royakkers (2004) show how such retrieval techniques could be implemented in the context of web mining by following what they call a “disallow-mining” technique. In their proposed solution, they refer to how the process of “spidering” (i.e., creation of indexes for database searches by the search engines by using web agents) can be influenced. The web agents check a file called “robot.txt” in order to ascertain which documents cannot be accessed. As van Wel and Royakkers mention, a similar “mining.txt” file could be created for the content mining tool to check before mining the content of the site. This file (they note) could be controlled by the site owner to provide permission as to what content may be accessible. Such a retrieval technique can potentially provide some respite against the threat to deontological norms of equality or autonomy.

We thus call for research that distills what deontological values can be applicable especially to a knowledge storage, retrieval, and access context, and focuses on how procedures and techniques promoting such deontological values can be designed. Future research may also investigate, by conducting empirical studies, whether these deontologically ethical retrieval mechanisms actually uphold such values in practice.

There is another potentially interesting line of inquiry here. While it certainly makes sense to investigate what deontological values are applicable in knowledge storage, retrieval, and access, it may also be useful to see whether such deontological values themselves may sometimes conflict with business interests. As a case in point, in the example above, mining the difference between men and women to engage in discriminatory practices may violate the deontological value of equality. However, such discriminatory practices may also be used to strategically attract customers (e.g., provide more discounts/offers to a particular gender) and ensure business success. The following illustrative research question captures this line of inquiry:

RQ4: *What deontological values are applicable to a knowledge storage, retrieval, and access context (especially in terms of procedures and techniques that can promote such values)? Can such deontological values conflict with economic success? If so, how can such conflicts be resolved?*

5.2.2. Research Theme 5: Virtues Relevant to Access and Retrieval of Knowledge

Consider the following comment by Floridi (1999):

Accessing information is not like accessing physical objects. Physical objects may not be affected by their manipulation, but any cognitive manipulation of information is also performative: it modifies the nature of information by automatically cloning it. Intrusion in the me-hood is therefore equivalent to a process of personal alienation: the piece of information that was meant to be and remain private and unique is multiplied and becomes public, it is transformed into a dead piece of myself that has been given to the world, acquires an independent status and is no longer under my control (p. 46).

The above quotation highlights why the issue of who accesses the knowledge-base embedded in a KMS can become important. Along similar lines, Alavi and Leidner (2001) note that one of the problems with storing knowledge in a KMS is that it is often made accessible to many individuals, some of who may misuse the knowledge. Our basic conjecture is that there are certain virtues that are readily more amenable to understanding/respecting how stored knowledge is to be accessed and used. For example, consider the virtue of integrity (Solomon, 1992) or the virtue of conscientiousness (Chun, 2005). Assuming that these virtues are institutionalized and routinely enacted in an organization, individuals in the organization can be counted on to access knowledge in a “proper” (i.e., ethical) manner. In other words, if such virtues are part of an organizational culture, or are possessed by individuals (in situations when individuals enjoy more volition and autonomy), such concerns of accessing knowledge can be minimized.

Thus, future research should focus on identifying what virtues are relevant in this context of knowledge access and retrieval, how they can be developed in the organizational community of practice, and whether these virtues can influence how the knowledge stored in KMS are accessed and used. We note that such virtues may sometimes interfere with whether (and how) knowledge is accessed. For example, an individual with integrity would not access confidential knowledge without prior permission, even if that knowledge might be urgent to meet an important project-related deadline. Thus, in some cases, virtues may conflict with, and prevent access to, knowledge that may be crucial for business success.

The following research question illustratively captures this line of inquiry, including the possible conflict noted above:

RQ5: *What organizational or individual virtues can influence proper storage, access, and retrieval of knowledge within a KMS? How can such virtues be developed within an organizational community of practice? Can such virtues sometimes conflict with considerations of knowledge storage/access/retrieval for business success? If so, how can such conflicts be resolved?*

5.2.3. Research Theme 6: Ethical Consequences Relevant to Access of Stored Knowledge

Here, we call for the need to investigate the effects of accessing stored knowledge. In fact, our call for this research question is primed by prior suggestions that a framework based on the consequentialist ethical notion can be very relevant to investigate issues of access to stored knowledge in an organization (Dulipovici & Baskerville, 2007).

In order to investigate this theme, future research could investigate and define consequences that are essentially “good” from the organizational or individual perspective, and those that have distinct ethical connotations—quality of work life, employee happiness or satisfaction, or employee involvement. It would be interesting to see whether such free access to knowledge influences these ethical consequences to a great extent. On the other hand, due to this access, organizations could run the risk of fraud, misrepresentation, knowledge distortion, and ultimately a possible loss of economic benefits. For example, one possibility is that more knowledge at one’s disposal increases the greater likelihood of misuse of that knowledge. Further, excessive availability of knowledge can

give rise to information overload, which can strain one's cognitive capabilities, especially if the knowledge is unstructured, thereby leading to reduced utility. In this perspective, it can be investigated whether one can design KMSs in order to reduce such harmful effects as information overload. For example, Marwick (2001) refers to strategies of designing the KMS in order to reduce such an overload. Turetken and Sharda (2004) also note how clustering strategies can reduce information overload. Given that free access to stored knowledge can have both positive and negative consequences, it would be useful to investigate which ethical considerations are more dominant in this dilemma that organizations may face.

Herein, future research can also investigate the consequences, particularly ethical consequences, of various information retrieval mechanisms. As Järvelin and Ingwersen (2004) note, a major concern of knowledge retrieval should be the consequential utility in the task and surrounding contexts. Ingwersen and Järvelin (2005) further assert that issues such as quality of work life should be prime concerns in the evaluation of such information retrieval techniques.

Following the delineation of such ethical considerations, future research could seek to design information retrieval techniques based on consequential ethical considerations such as the Stuff I've Seen (SIS) product at Microsoft (Cutrell, Dumais, & Teevan, 2006). While the SIS product was mainly for retrieving personal information, such that better ease of use and quality of life was promoted, future research may extend this to retrieving work-related information. All these newly designed systems using sophisticated retrieval techniques can be said to focus on the end-user's utility—either in terms of better quality of personal or work life, or even hedonistic utility in terms of more happiness and ease. We call for designing better systems that incorporate access techniques upholding these consequential utilities even better, and for purposeful evaluations of these systems, as captured in the following illustrative research question:

RQ6: *What are the effects of access to stored knowledge? How can storage/access/retrieval techniques be designed to promote positive consequences?*

5.3. Ethical Considerations in Knowledge Transfer

5.3.1. *Research Theme 7a: Relevance of IT-Enabled Deontological Values to Knowledge Transfer*

Here, we call for an investigation of whether characteristics of IT (i.e., KMS) can promote (or inhibit) certain deontological values and whether the promotion of such deontological values leads to greater knowledge transfer. Referring back to the earlier research question of knowledge creation, we contend that characteristics of IT that are used for knowledge exchange, especially in collaborative settings, can promote certain deontological values.

Our supposition in this area follows Chatterjee et al.'s (2009a) observation that technology should have features to support/promote certain deontological values such as consistency, respect for individual's autonomy, accountability, equality, and freedom of expression. Such deontological values can be deemed very important for knowledge sharing and knowledge transfer. For example, Szulanski and Jensen (2006) highlight the value of accountability in the context of knowledge transfer. As Bock et al. (2005) note, considerations of extrinsic rewards are extremely important in formation of an attitude toward knowledge sharing and transfer. Such reward considerations implicitly incorporate the notion of accountability because, unless one is accountable (in effect, known) for sharing or transferring of knowledge, one cannot perceive possibilities of rewards for that.

Furthermore, as Lee and Choi (2003) suggest, freedom of expression is an extremely important enabler of knowledge transfer and knowledge creation. Again, consider the deontological value of equality, which can be interpreted, in our context, as the idea that everyone has a basic right to equal information. If the KMS used for knowledge transfer and sharing promotes such a deontological value

(e.g., the ability to broadcast knowledge across the organization), then we argue that it would be quite beneficial to knowledge transfer.

Overall, we can argue that KMS needs to be designed in ways that can promote such deontological values. This view is supported by Garavelli, Gorgoglione, and Scozzi (2002), who argue that KMS should support practices that can engender knowledge transfer. Consider again the deontological value of freedom of expression. It is conceivable to design communication media (as part of the KMS) that can promote alternate channels of communication. In a collaborative setting, this can enable both synchronous (e.g., chat) and asynchronous knowledge transfer (e.g., email) (Marwick, 2001; Morey, 2001), thus bolstering freedom of expression. We contend that future research might thus fruitfully engage in identifying such relevant deontological considerations in the course of knowledge transfer and designing communication media and other components of a KMS so as to promote such values. This is captured by the following illustrative research question:

RQ7a: *Do certain characteristics of IT-based KMS promote/inhibit certain deontological values (e.g., freedom of expression); what effect does the promotion/inhibition of such deontological values have on knowledge transfer?*

5.3.2. Research Theme 7b: Relevance of Organizational Norms or Codes (Deontological) to Knowledge Transfer

Here, we call for an understanding of whether there are some organizational level deontological norms for using IT (KMS) to transfer knowledge. In this context, we draw the reader's attention to the well-known codes of practice for using computer and information systems, as outlined, for example, in the ACM code for ethics. This code of ethics can be likened to a deontological imperative, which promotes certain rules of conduct for IS professionals related to designing, managing, and using IT. For example, one of the codes of ethics mentions that "computing professionals have a responsibility to *share technical knowledge* with the public by encouraging understanding of computing, including the impacts of computer systems and their limitations. This imperative implies an obligation to counter any false views related to computing" (emphasis added) (ACM, 2010).

There are other well-known codes that discuss the issue of knowledge transfer. For example, Baskerville and Dulipovici (2006, p. 5-6) discuss the ethics of transferring/retaining personal knowledge from Article 8 of the Charter of the Fundamental Rights of the European Union:

Everyone has the right to the protection of personal data concerning him or her. Such data must be processed fairly for specified purposes and on the basis of the consent of the person concerned or some other legitimate basis laid down by law. Everyone has the right of access to data which has been collected concerning him or her and the right to have it rectified. Compliance with these rules shall be subject to control by an independent authority.

This example can be seen to uphold the basic deontological value of privacy within the scope of knowledge transfer. That is, no personal knowledge about others may be communicated (transferred) without permission of that individual. Such examples (from the ACM code for ethics and the Charter of the European Union) illustrate the role of deontological codes in the phenomenon of knowledge transfer, a relation that has been acknowledged in prior literature (Pan & Leidner, 2003). Along the same lines, prior literature (e.g., Victor & Cullen, 1988; Cullen, Oarbiteeagm & Victor, 2003) suggests that organizations may have ethical climates that are associated with deontological norms at an organizational level. For example, deontological norms such as consistency of knowledge, freedom of expression, and equality in access to knowledge (see Chatterjee et al., 2009a) can be inscribed within organizational practices that might influence knowledge transfer in an organization.

We contend that, if such deontological norms are present in an organization, it will promote using KMS in a manner that will facilitate knowledge transfer in such organizations. Primed by Courtney's (2001) observation of creating organizational policies for encouraging knowledge sharing and transfer, we thus call for a clearer delineation of organizational-level deontological norms for guiding

knowledge transfer using KMS. Our view here is also reinforced by Szulanski's (2000) argument that knowledge transfer depends on organizational norms and values. Following such observations, we believe that it would be interesting to investigate the effect of such organizational-level deontological ethical norms (for KMS use), specifically whether the existence of such norms can ultimately promote knowledge transfer. In other words, future research could investigate the following illustrative research question:

RQ7b: *Do organizational-level deontological norms promote better knowledge transfer using a KMS?*

5.3.3. Research Theme 8: Virtues Relevant to Knowledge Transfer

In this research question, we call for an investigation of whether there are certain virtues, both at the organizational or at the individual level, which can influence knowledge transfer in an organization. As MacIntyre (1985) notes, virtues are situated in a community of practice. Indeed, an organization with its norms, ethical climate, and directives can be such a community of practice (Chun, 2005). As suggested earlier, extant research has actually articulated that organizations, as communities of practice, can possess certain virtuous attributes that might lead them to achieve organizational successes across multiple dimensions (Chun, 2005; Collier, 1998).

We contend that an investigation on delineating and articulating certain virtues, whether at the individual or organizational level, and how they impact knowledge transfer can be a worthwhile venture for future research. For example, as Singh (2008) citing Hubbard, Samuel, and Cocks (2002) notes, for good knowledge management, the characteristics of innovation or creativity need to be encouraged. The notions of innovation and creativity draw us very close to the notion of zeal, a recognized virtue at the individual and the organizational level (Chun, 2005). We contend that, if an organization, its members, or its leaders, are characterized by such virtues, the quantity and quality of knowledge sharing is likely to be enhanced. This is illustratively captured by the following research question:

RQ8: *Does the practice of virtues, both at the organizational or individual level, promote knowledge transfer; what virtues are relevant in this regard and how do they promote knowledge transfer?*

5.3.4. Research Theme 9: Positive/Negative impacts of Knowledge Transfer

Related to this theme, we call for an understanding of the positive effects of knowledge transfer. For example, does knowledge transfer give rise to consequences with a positive orientation in organizations? Does transfer of knowledge give rise to increased hedonistic outcomes such as happiness, joy, or pleasure in organizations? The line of argument follows from research theme 3, which discusses the effect of knowledge creation on organizational positive outcomes. Likewise, we call for research that investigates relations between knowledge transfer and positive organizational outcomes. It would also be interesting to see if there is a recursive relation between the two. For example, do such positive characteristics of organizations affect knowledge transfer? Such a relation, if empirically demonstrated, would deepen our understanding of the process of knowledge transfer.

One could also argue that knowledge transfer could affect organizational outcomes in a negative way. For example, more knowledge transfer (or being coerced to transfer more knowledge) between individuals could lead to a sense of job insecurity or emotional instability among relevant employees. A possible research question that captures this line of inquiry is as follows:

RQ9: *What positive/negative effects (drawing from POS) can knowledge transfer produce in organizations?*

5.4. Ethical Considerations in Knowledge Use/Application

5.4.1. Research Theme 10: Deontological Values Relevant to Knowledge Use/Application

Here, we call for an understanding of whether organizational level deontological norms affect knowledge application/use. For example, in a recent research study, Tseng and Fan (2011) argue that a rule-based organizational ethical climate (essentially a deontological climate) affects knowledge use. Drawing on such works, we contend that it would be useful to unearth which deontological values affect knowledge use, and how. For example, one could argue that freedom of expression, a key deontological value, would have a significant effect on knowledge use (given that applying one's knowledge is inherent in one's self-expression).

On the other hand, especially in the area of KM, there may be information that, from an ethical perspective, should remain confidential (e.g., customer-related information) and should not be used. However, it might make more business sense to sell this information to a third party (e.g., a marketing firm) for economic benefits. Therefore, we can see that there may be tensions between deontological values and knowledge use/application that might need resolution. Therefore, possible research question(s) that could guide this investigation could be as follows:

RQ10: *What is the relationship between deontological values and knowledge use/application? Specifically, do deontological values facilitate knowledge use/application? Are there tensions between such deontological values and certain instances of how knowledge is used/ applied? If so, how can such tensions be resolved?*

5.4.2. Research Theme 11: Virtues/Vices as a Result of KMS Use

Delving into this theme would require an understanding of whether the use of IT (KMS) leads to certain dysfunctional virtues or vices in an organization. There has been a long-standing argument that the IT-enabled information age has ushered in new and complex ethical problems (Mason, 1986; Marshall, 1999; De George, 2000). In fact, as De George (2000) notes, disinformation and misleading information are often vices that have characterized the information age and organizations need to understand the ethical implications of using IT, such as a KMS.

IT can lead to certain such vices because IT often provides a window of opportunity for unethical behavior (Datta & Chatterjee, 2008). Recalling our definition of virtues, if virtues exist in a community of practice (MacIntyre, 1985), then vices (the opposite of virtues) can also be argued to exist in a community of practice. For example, conscientiousness as a virtue finds its corresponding vice as laziness or indolence. The use of KMS may have the possibility of making an individual "lazy" in terms of searching for alternate sources of knowledge. That is, an individual might want to limit himself/herself to information available via the KMS and not explore any other avenues of knowledge (e.g., face to face meetings), even if they are possible and are mechanisms for obtaining alternate or richer knowledge views. So, whether or not the use of KMS can give rise to certain dysfunctional vices (e.g., indolence) remains an interesting question for future researchers, which the illustrative research question below captures:

RQ11: *Does the use of KMS lead to the creation of organizational virtues and vices?*

5.4.3. Research Theme 12: Consequences of KMS Use

In this final theme, we ask future researchers to investigate the ethical consequences of a properly designed and effective KMS. For example, research could investigate issues such as KMS-based allocation of human resources to projects and its corresponding effects, such as person-job fit, person-group fit, and person-environment fit (Kristof-Brown, Zimmerman, & Johnson, 2005), each of which (or the lack of which) may produce corresponding effects (with an ethical connotation) such as employee stress and quality of work life, as mentioned earlier. We call for future research to investigate and delineate what "good" consequences ultimately are relevant considerations for a

KMS. Delineating such consequential implications for KMS use in an organization, and its corresponding empirical investigation on ethical consequences for employees and organizations, may be pursued to good effect through future research. This line of inquiry is illustrated by the following research question:

RQ12: *What ethical consequences (for an individual and an organization) can arise from use of KMS within an organization?*

6. Contribution and Implications

6.1. Contribution

The contribution of this paper is manifold. The first contribution of this paper is that it draws our attention to the relevance of ethics to KM, an important and growing area in the IS discipline. While there have been sporadic attempts at linking ethics to KM (e.g., Land, Nolas, & Amjad, 2007; Frize, Yang, Walker, & O'Connor, 2005; Alter, 2006; Bryant, 2006), and we certainly applaud such efforts, a systematic research agenda for incorporating ethics into KM has thus far been missing. We offer this paper as a first step in addressing this need.

The second contribution of this research is in providing an illustrative set of research themes and questions on KM with an emphasis on ethical implications. We believe these can potentially lead to numerous empirical studies. Our belief is that, if our colleagues respond to this call for incorporating ethical considerations into the research agenda for KM, we will have a deeper understanding of the ethical implications in KM.

The third contribution is that the paper brings into fore the notion of virtues in IS research. By articulating the nature of virtue ethics and by discussing virtues relevant to KM, the paper shows that such considerations of virtues can be useful in understanding the management of information systems in general.

The final contribution is that the paper highlights the need for ethical considerations not only in the IS, but also in the business discipline in general. The recent economic meltdown has prompted researchers to emphasize the importance of incorporating ethics in business organizations (e.g., De Cremer, Mayer, & Schminke, 2010), a call echoed in the IS research community as "the stakes are high" (Bryant et al., 2009, p. 785). This paper, by discussing ethical issues related to IT-enabled KM, answers this call to an extent. It supports observations that ethical focuses create more market value (Mackey et al., 2007) due to the legitimacy built by such ethical considerations (Surie & Ashley, 2008). In fact, in an IT-enabled business world "in which most firms are embedded in alliance networks, unethical action can rapidly destroy a reputation and brand value that has taken years to build" (Surie & Ashley, 2008, p. 239). In a global economy, ethical considerations are important in sustaining international supply chains (Roberts, 2003) where organizations often outsource to independent suppliers in developing countries, characterized by geographical, cultural, and institutional distances (van Tulder, van Wijk, & Kolk, 2009). Thus, ethical considerations can promote organizational success and innovation (Stahl, 2012; Culnan & Williams, 2009), a view that this paper forwards.

One possible criticism of this paper is that, while it does create a link between ethics and KM, it does not provide any specific "solutions" on making KM and surrounding activities and consequences ethical. We contend that such solutions would actually emerge from the empirical evaluations. But this would be specific to the empirical study context. For example, in a case study of organizational KM, one may analyze the situation using both the deontological and virtue perspectives (which may offer conflicting guidelines). However, the empirical evaluation may also show what is best for the organization to follow, and accordingly indicate the solutions that would be effective in the context. In other words, if the deontological perspective is empirically seen to be more suitable (i.e., effective, using whatever yardstick that may be appropriate for the organization) on an issue, then the focus would be to develop explicit norms and codes of action. Our position is that a future research study pursuing one of the proposed research question(s) would likely find what is ethical (or not) and

thereby open the possibility of developing/implementing an ethical solution in the context the study. In other words, our specific objective is to create the awareness and background for including ethical considerations in KM practice, not to offer a specific solution per se – that would be the next step that could be undertaken in the spirit of engaged scholarship (Van de Ven, 2007).

There is another caveat that we would like to draw reader's attention to. While this paper is built on the premise that ethical and economic considerations are closely related (Donaldson, 1982) and that ethical considerations promote economic success (Culnan & Williams, 2009), we do recognize that, in some cases, there may be a tension between such ethical and economic interests that are difficult to resolve (Lozano & Sauquet, 1999). This is captured by "the separation thesis, that is, the notion that business and ethics can be meaningfully separated" (McVea & Freeman, 2005, p. 58).

For example, Newbert (2003) notes that focusing only on economic considerations, especially from a neoclassical viewpoint, reduces capabilities to act ethically, in effect "institutionalizing a culture of greed" (p. 259). Chatterjee et al. (2009a) has noted such conflicts between ethics and economics by stating that a focus on ethical considerations (by an agent) may increase agency costs for the principal who employs the agent¹². Indeed, the entire body of transaction cost economics or TCE (e.g., Williamson, 1975, 1985) is built on a key assumption, that of opportunism (Rindfleisch & Heide, 1997). Opportunism basically involves unethical behavior such as lying, cheating, or stealing to further economic self-interest (Williamson, 1975). In other words, the TCE literature is built on the assumption that ethical and economic considerations can be in conflict, which is an important assumption in neoclassical economics (Etzioni, 1990; Jones, 1995). Thus, organizations or individuals may be tempted to engage in unethical practices to benefit economically, at least in the short term. As Tilley (2000) argues with an example from environmental ethics, organizations find that "there is still a great deal of tension between what is economically appropriate behavior and what is [environmentally] appropriate behavior" (p. 35).

Also, ethics may exclude certain aspects of businesses¹³. As research theme 10 illustrates, in the area of KM, there may be information that from an ethical perspective should remain confidential (e.g., customer-related information), but it might make more sense to sell such information to a third party (e.g., a marketing firm) for economic benefits. Further, certain ethical perspectives may be in conflict with certain kinds of businesses or industries, such as the gaming industry. These examples imply that ethics and business interests may sometimes come into conflict such that business/economic success may not necessarily arise from ethical considerations alone.

6.2. Future Implications

Related to the contribution of this paper, a number of future implications arise. First, we call on our colleagues to further this line of thought and articulate alternate conceptualizations of how ethics can be incorporated into KM. As Siponen and Iivari (2006) note, there are many other streams of ethical thought, which directly or indirectly, draw from one of these classical ethical perspectives—for example, Habermas' (1990) discourse ethics, or Singer's (1993) preference utilitarianism. Recently, Mingers and Walsham (2010) have articulated the relevance of discourse ethics to IS research and practice. Future research, for example, could apply discourse ethics specifically to further KM research. Again, recent works in Information Ethics (IE) (e.g., Ess, 2006; Capurro, 2006; Floridi, 1999, 2002, 2005; Introna, 2005; Coleman, 2001) can provide intricate perspectives on the ethical aspects of IS. Certainly, future research needs to engage with these different ethical perspectives and instill them into areas of IS such as KM. On a related note, we observe that recent IS research has begun to engage in meta-ethical reflections about prevalent IS issues such as privacy and intellectual property (Stahl, 2012). In the same vein, we call for meta-ethical reflections of other IS areas including and beyond KM (e.g., IS strategy, design, etc.), thereby advancing our ethical conceptions related to IS.

¹² Jones (1995), however, makes the counter-argument that ethical agents in principal/agent relationships would be desirable "because they will not require expensive monitoring by principals" (p. 417).

¹³ We are grateful to the senior editor and an anonymous reviewer for the argumentation incorporated in this paragraph.

Second, this paper has numerous implications for future empirical studies. As mentioned earlier, each of the research themes/questions could constitute a separate study. Having said this, such research questions could also be investigated in varied organizational, cultural, and technological contexts, which could provide a deeper overall understanding and implication of ethics in KM. Furthermore, it will also highlight certain dilemmas that can inherently be present in such ethical considerations, such as the conflict between two deontological values, or even the conflict on whether to follow a deontological, consequential, or virtue perspective in a specific context and situation.

The third implication of this paper is to raise the awareness regarding the need for incorporating ethics into other facets of IS research. There are clearly areas beyond KM that merit an ethical focus, alongside an efficiency focus. In fact, ethics is a relevant phenomena to most, if not all, aspects of IS research, as suggested in the recent special issue on ethics in the *Journal of the Association for Information Systems* (2009) and the *International Conference on Information Systems'* (2008) conference theme titled "Ethics, Design and Consequences of IT".

To do justice to all ethical aspects of IS would be impossible in the scope of a single paper. We start this discussion on ethical aspects of IS by focusing on KM and hope to inspire future research into other ethical aspects of IS. For example, e-commerce is a particularly relevant arena where opportunities of unethical behaviors abound (Datta & Chatterjee, 2008). Again, emerging areas of research such as Green IT can benefit from such ethical considerations. In fact, they can draw on notions presented in the literature on environmental ethics, which, in turn, often draws on the classic ethical perspectives presented in this paper. Further, IT strategies and leadership research may venture into devising ethical IT strategies and virtues related to ethical leadership.

To conclude, we hope this work will energize future research on ethical aspects of KM, and on a broader front, also sensitize the IS research community toward the importance of ethical issues related to IT, thereby prompting more research investigating ethical implications related to IT.

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