WHAT DOES KNOWLEDGE HAVE TO DO WITH ETHICS?

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ABSTRACT

In the same way that useful theory in knowledge management systems leads us to rethink the nature of knowledge (Spender & Scherer, 2007) a theory of ethics that would be informed by current research in moral psychology will lead us to rethink the nature of ethical action. This chapter introduces a research program that has tracked ethical action among computer professionals and uses the insights from that research to make suggestions about how purposive moral action is undertaken and how it might be supported by knowledge management systems.

Keywords: Moral Exemplars, Moral Action, Moral Skills, Craftpersons, Reformers, Whistleblowing

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PROBLEMS, PURPOSES, AND KNOWLEDGE

> There is a consensus concerning the subject-matter of ethics so general that it would be tedious to document it. It is that the business of ethics is with "problems ", i.e. situations in which it is difficult to know what one should do; that the ultimate beneficiary of ethical analysis is the person who, in one of these situations, seeks rational ground for the decision he must make; that ethics is therefore primarily concerned to find such grounds, often conceived of as moral rules and the principles from which they can be derived… (Pincoffs, 1971).

After claiming that it would be tedious to do so, Edmund Pincoffs' classic article on "Quandary Ethics" documents the extensive philosophical agreement that ethics is primarily about giving rational principles and procedures for solving moral problems, or "quandaries." This agreement on the nature of ethics is also foundational to agreed-upon goals for the practical and professional ethics curriculum (Callahan, 1980).

If ethics is primarily about applying principles and procedures to make decisions in response to problems then what does knowledge have to do with it? Presumably, one needs to know the problem and the principles and then to apply the procedures. In much ethics teaching the problems are predefined by the cases, designed to highlight particular ethical principles, (Huff & Frey, 2005) and so not much effort is expended in defining the problem itself. Both in the classroom and on the job, the recommended procedure to define the problem is stakeholder analysis. Many decision support systems (e.g. Gotterbarn, 2001) use this approach to guide decision-making regarding the design of software systems. Thus, a knowledge management system to support such decisions would need to contain information about stakeholders and provide access to procedures and principles that could be applied to the problem.

This classic approach to ethics treats the problem as static and locates the expertise in the correct application of principles to the problem at hand. And the sort of knowledge needed to support such a process is relatively unproblematic factual knowledge that can be indexed and straightforwardly combined. In this approach, a knowledge management system to support ethical decisions should in principle be relatively simple to design and implement. It would include a structure to help the decision maker collect and organize the relevant factual knowledge, some processes that led the decision maker to evaluate various options in the decision space, and perhaps a way to systematize value tradeoffs in making a decision. This approach focuses the knowledge management system on the task of providing *decision support*, which in turn presumes that ethics is about the decisions one makes when confronted with a relevant choice.

But Pincoffs' (1971) early essay casts doubt on this approach to ethics and insists that being ethical is more than responding appropriately to isolated decision problems. Likewise, our recent research on moral exemplars in computing (Huff, Barnard, & Frey, 2008a, 2008b) provides a picture of ethical careers that are not primarily composed of a series of ethical decisions, but instead are constructed over time in response to life goals, organizational and social constraints, and idiosyncratic attachment to particular ethical goals (e.g. help the customer or the handicapped, reform privacy laws or software design standards) (Huff & Rogerson, 2005).

The purpose of this short essay is to introduce this alternative notion of ethics, a conception that is rooted in planned action over the life of a career and based in the goals of the individual actor in their organizational context. We might call this a *purposive-action* approach as apposed to the

deliberative-decision approach described above. If this is a better picture of ethical action in the modern organization, what are its implications for knowledge management systems that aim to support this sort of ethical action?

THE COMPLEXITY OF PURPOSIVE MORAL ACTION

The picture of purposeful moral action we present is based on the most recent work in moral psychology (Haidt, 2008; Huff & Frey, 2005; Lapsley & Narvaez, 2005; Narvaez & Lapsley, 2005) and on an analysis of extensive "life-story" interviews with moral exemplars in computing (Huff & Rogerson, 2005). The picture is not narrowly focused on how the individuals made isolated ethical decisions in particular circumstances. Instead, it is focused on how each one became the sort of person who was able to recognize opportunities for moral action, to plan the steps to take advantage of the opportunities, and then to carry out those plans in complex and conflicting social and organizational contexts. In psychological terms we are interested in how individuals achieve sustained excellence in ethical behavior in the field of computing. In philosophical terms we are interested in how individuals attain the virtues needed to achieve the virtuous practice of computing.

This model arises from our study of moral exemplars in computing (Huff & Rogerson, 2005; Huff & Barnard, 2008). In this research we did extensive interviews with individuals in the UK and Scandinavia who had been nominated as moral exemplars in the field of computing. An international panel with expertise in computing ethics nominated and approved all the exemplars. Criteria for nomination were:

1. Either a) a sustained commitment to moral ideals or ethical principles in computing that include a generalized respect for humanity, or b) sustained evidence of moral virtue in the practice of computing.
2. A disposition to make computing decisions in accord with one's moral ideals or ethical principles, implying also a consistency between one's actions and intentions and between the means and ends of one's actions.
3. A willingness to risk one's self-interest for the sake of one's moral values.
4. A tendency to be inspiring to other computing professionals and thereby to move them to moral action.

The final sample consisted of 24 individuals, including men and women, academics and those in industry and government, and people at the beginning and ends of their careers. Interviews ranged from 2 to 5 hours in length, spread across 2 days. Interviewees were asked to tell stories from their professional career (ranging from 19 to 30 stories each). These stories provide extensive detail about characters, goals, organizational contexts, personal feelings, strategic planning, and problem solving in the careers of people with a wide range of professional moral and ethical commitments.

Several striking findings from that work have shaped the theoretical position we outline here. First, we found that there was not a unitary profile of the way moral exemplars went about their work. There were, at least, two types: *reformers* who tried to change social systems and *craftspersons* who designed systems to help individuals. A significant number of the exemplars did not cleanly fit into either category. We expect that two types is not enough complexity to capture the variety of way our exemplars are pursuing moral goals. This leaves the likelihood that there are more types or forms of good computing. Each individual had a history of specific, even idiosyncratic, ethical commitments and purposes they were pursuing. From their perspective they were not trying to "make ethical decisions," but instead, they were designing systems for the handicapped, or designing privacy-enhancing software to change business-customer relationships, or supporting women in engineering, or changing the way safety-critical

software was designed and evaluated, or supporting openness in software design. These purposes were the motivations for their actions and they varied dramatically from person to person. It was these purposes that organized and energized their moral action over their careers.

Occasionally they would talk of ethical deliberation at particular choice points in their careers (e.g. to take a job offer, accept a contract, to leave an organization). But most of their stories were about the pursuit of their purposes over time: forming goals and plans, gathering support from others in their networks, finding creative solutions to difficulties, regrouping when plans went awry. The skills and knowledge usually associated with ethical deliberation over choices were not often essential to these endeavors. Instead, we found that social skills (e.g. understanding other people) and technical skills (e.g. understanding database structures) more often featured as central in these stories.

Purposive moral action, undertaking long-term projects with ethical goals in mind, involves far more than simple decision making. It can take a variety of forms, have a variety of goals, and is supported by a variety of influences.

Influences on purposive ethical action: PRIMES

This more complex picture of the moral actor as engaged in purposive action over time, within a social context, has lead us to construct a model of sustained moral action in social context (PRIMES). The model we present here (1) grounds moral action in relatively stable Personality characteristics, (2) guides moral action based on the Integration of Morality into the self-system, (3) shapes moral action by the context of the surrounding Moral Ecology, and (4) facilitates moral action with morally relevant Skills and knowledge (thus the PRIMES acronym). The model seeks to explain the daily performance of moral action of computing professionals and to illuminate ways that this ethical action might be supported and encouraged.

Personality. Personality clearly influences both the kinds of jobs that people undertake and the ways they go about their work (John & Srivastava, 1999). In our work, we have found that it influences the moral goals of our exemplars (Huff & Barnard, 2009). For instance, those who were more extraverted were more likely to choose goals that involved influencing organizations and systems in order to reform them. Thus, personality can serve as an anchoring point for moral inclination. Even so, personality can in turn be influenced by appropriate life experiences. New work in personality theory (Roberts, Walton, & Viechtbauer, 2006) suggests that personality can change over time, particularly when such change is reinforced by social roles (that is, moral ecology). Thus personality grounds, but does not solely determine moral character and action.

Integration of morality into the self. Much has been made of the centrality of moral commitment. But few theorists have spoken carefully about the components of moral commitment, how it is cultivated and achieved, and the ways that it influences moral action. Recent work in psychology can help us build a multi-faceted view of moral commitment as one component that guides moral action, but still is not solely determinative of it. Our picture of moral action among computing exemplars shows moral commitment appearing more like strategic goals that guide action over time, and less like isolated acts of willpower. These strategic goals are set apart from other goals in our exemplars by being so central to the individual's conception of who they are, that they take precedence over many other goals. But they are not static. These strategic goals both influence and are influenced by the social and organizational surround and are themselves open to change over time.

Moral ecology. Moral action is embedded in a social surround that can either support or thwart it. We call this social surround a moral ecology (Huff, Barnard, & Frey, 2008b), or more accurately, a system of interlinked moral ecologies. Countries, cultures, industries, companies, divisions, workgroups, mentorship networks, and professional organizations all have morally relevant expectations and pressures that constrain and sometimes support moral action. These values, expectations, and influences are embodied in rules, guidelines, and mission statements, but also in the structure of software, the design of buildings, the requirements of procedures, and the roles individuals in the organization adopt or are assigned. Individuals can enter and leave moral ecologies, can influence them, and can even act in defiance of them (Greene & Latting, 2004; Van Es & Smit, 2003; Marnburg, 2000; Trevino, 1986). Knowing how to navigate in the relevant moral ecologies is a crucial skill for purposive moral action in an organization. But many of the moral exemplars told stories of significant time spent influencing moral ecologies in organizations or professional societies or in building smaller networks of "local climate" to support their plans. Moral ecologies thus constrain and support, but do not solely determine moral action.

Moral skills and knowledge. Much of what we call virtue is based in skills and knowledge of how to act in particular worlds (Lapsley & Narvaez, 2005). The highest praise we might summon for the morally committed incompetent would be "well intentioned" but certainly not "virtuous." Without these skills and knowledge, moral commitment would be impotent. Some of the skills and knowledge associated with successful moral action among our computing exemplars are listed in Table 1. The categories of skill and knowledge are based on a simplified version of the waterfall model of software design, and thus represent the kinds of tasks typically associated with the work of computer professionals. They encompass framing the work to be done, constructing creative solutions, testing those solutions, and finally implementing the solution. It is important to remember that the list in each set is composed of examples of relevant skills and knowledge. The particular skills and knowledge needed for any specific task can vary widely. As one might expect, the more abstract the description of the skill (e.g. "projecting oneself into the perspective of others") the more it will broadly apply. So the category labels in table 1 are useful guides in understanding the structure of skills and knowledge in computing professionals, but less helpful in predicting the specific knowledge or skill needed in one application (e.g. understanding the privacy and job security concerns of Swedish union workers when designing a medical information system). In software design, where one might work on a range of different applications, some of the skills involve knowing how to seek out, acquire, and test the needed knowledge.

SKILLS, KNOWLEDGE, AND PURPOSEFUL MORAL ACTION

With the addition of the skills and knowledge component of the PRIMES model we can see where the management of knowledge and the design of knowledge management systems might fit in the picture of purposive moral action. The PRIMES model delineates at least two categories where support could be helpful: not surprisingly, skills and knowledge, but also moral ecology.

Identifying skills and knowledge for ethical action

If we could compile an agreed upon list of skills and knowledge that aid the expression of moral decision making and performance, then it would be relatively straightforward to determine the sort of support they require and to include this support in knowledge management systems. But compiling a useful, generalizable list has proven more difficult than it sounds. Many have recently contributed to the discussion concerning moral skill sets, and their respective lists of skills differ from one another both in structure and content, despite many common themes (see Huff, Barnard, and Frey 2008b for several lists). Blasi (2005, p. 70) notes that lists of skills tend

to be "invariably long … easily extended, and are largely unsystematic." Even where two authors agree on some of the same skills, they categorize them differently and use different terminology to describe the same skill.

This difficulty in determining a canonical set of skill sets is understandable, once one recognizes the variety of moral goals and moral ecologies that influence moral action. Different people with different moral goals and in different ecologies will need different skills and knowledge to achieve their goals. Thus, it is doubtful that a canonical list of skill sets could be created or that it should even be attempted. We can take some solace in the knowledge that as one is more concrete in specifying goals (e.g. protecting the privacy of the Swedish hospital workers mentioned above), the specific kinds of support that would be needed to accomplish those goals become more clear (e.g. knowledge of Swedish privacy law, empirical methods to understand the role of Swedish hospital workers, etc.). Thus, though there may be a more general subset of skills and knowledge that support ethical action broadly, it is likely that skills and knowledge (and even commitment) are more domain specific. This domain specificity helps us to understand how individuals can carry out worthy ethical projects in one domain, and yet be found wanting in others.

Thus the success and structure of purposive moral action in one domain may well differ from those in other domains. In addition the local moral ecology can alter the structure of moral action from one ecology to another. Work by Frey (In press) suggests, for example, that in Caribbean countries where significant corruption is found, even individuals who simply want to adopt the goal of being good craftspersons may well find themselves of necessity engaging in reform of the system (in the form, for example, of whistleblowing). In addition, the structure of work in a profession or organization may well alter the kind of skills (and certainly the knowledge) required for successful moral action in that profession or organization. The work of our computing moral exemplars consists, for the most part, of planning, creating, testing, and implementing particular products. This is design work and requires something like the skill and knowledge sets listed in table 1. The organization of table one is based on a simplified "waterfall design" from software development, and thus both the structure and content of the skills and knowledge are tailored to the context of design work. However, individuals in other occupations are engaged in differently structured work (e.g. the direct provision of service). We expect that inductive approaches to compiling a skills and knowledge inventory will find these differently structured professions to have different sets of skill and knowledge.

Again this has implications for the design of KM systems. If the skills and knowledge in moral action in software design are different from those required for moral action in direct service, then a KM system would have to reflect those differences, perhaps even in the structure of work flow and the kinds of knowledge indexed. This is not a trivial task. The idea is that there may well be no general-purpose KM system for ethical/moral action within a profession (since there are different goals even within the profession) and most likely no general-purpose KM system that would work across professions.

Swimming upstream: whistleblowing and reform in organizations

Another issue for the construction of knowledge manage systems to support purposive moral action is the variety of purposes that the moral actor can adopt. One of the moral exemplars in our sample characterized the theme of his career as "swimming upstream." Invariably, the positions he adopted in organizations and in research direction were initially unpopular, but his persistence and skill in building supportive networks often allowed him to successfully challenge

the received wisdom. This story of working within an organization to influence, adapt, and even challenge an organizations' goals is not uncommon among our exemplars. This kind of moral excellence, then, often consists in going against the grain of at least the proximate goals of an organization. As the director of an academic program, our "upstream swimmer" shared higher order goals (e.g. designing and delivering good education) with his organization. But his vision for his program was substantially different (and ultimately successful). How can an organization (or a knowledge management system) anticipate and support such excellence when it occasionally runs counter to proximate organizational goals?

There are harder cases than the successful internal entrepreneur. The classic hard case is that of whistleblowing. Here, the proximate goal of the individual (exposing wrongdoing or changing organizational policy) runs explicitly counter to that of the organization. There are arguments to be made that supporting whistleblowing, or ethical dissent, is in fact in the interest of the organization (Near & Miceli, 1995). And there are recommendations for the construction of support systems for whistleblowing (Greene & Latting, 2004). But this kind of support consists less of providing static information to the individual and more of providing access to organizational networks, procedures, and resources. Ethical dissent in an organization requires support to be successful, and the support is consists not of traditional access to information, but rather what one might call *instrumenting the Moral Ecology*.

Designers of knowledge management systems are not, of course, ignorant of the need to provide access to people and procedures (Spender & Scherer, 2007). But it is interesting to note that in the moral domain as well as in other organizational support domain, access to static knowledge is not enough to support the complexity of action. Thus the greatest benefit that might come from KM systems in organizational life might be to instrument the moral ecology to provide support for ethical dissent.

CAN WE MANAGE SUPPORT FOR ETHICAL PERFORMANCE?

Thus we now find two places to anchor knowledge management for purposive moral action: (1) the skills and knowledge associated with a profession or goal set and (2) access to the moral ecology to support purposive moral action. This is a substantially different picture of the moral actor from that of "quandary ethics." It is not limited to decision-making or judgment and is as complex and long term in structure and goals as most other organizational activity. We thus need to think anew about moral action in organizations to discover how to support it with knowledge management systems. Useful knowledge management approaches derive their usefulness, at least in part, from the extent to which they make us think anew about knowledge. (Spender & Scherer, 2007). And in this case, we need to think anew about the knowledge that supports ethical/moral action.

What knowledge management systems do, in fact, is help to support practice *in the absence of knowledge*, or "supporting imaginative practice" in knowledge workers (Spender & Scherer, 2007). This is also what moral exemplars do, act with skill in the face of a lack of knowledge. To support this imaginative practice, knowledge management systems should provide access to explicit and implicit knowledge, social relationships, organizational processes, and relatively straightforward things like standards and best practices. The variety of skills and knowledge in Table 1 corresponds to the similar variety in the sorts of things identified as knowledge in current theory on Knowledge management systems. And KM systems that support the acquisition, indexing, and access to knowledge that supports moral action could indeed be thought of as ethical KM systems.

Conclusion: Reconstructing ethical action and ethical knowledge

It seems hopeful that in thinking carefully about ethics and knowledge management systems, we have had to rethink purposive moral action. This parallels the rethinking that knowledge management theorists have been doing about the nature of knowledge and work (see, for example, Spender & Scherer, 2007 or Nonaka, 1991). The ethical actor is not a passive recipient of a pre-packaged decision space. Instead he or she must shape the decision, and the organization, in light of proximate and long-term goals and imaginatively construct and implement solutions, often in the absence of explicit knowledge about the right course of action. It is this more complex view of moral action that should be our guide in thinking about the role of knowledge management systems in supporting moral action.

We may well find that KM systems that support moral action in an application area are, indeed, simply those that best support the actors in doing their work well. The implication is that acting morally is not a general-purpose thing one does while doing other work. It is a thing that is inherent in the way one goes about the work itself, and the goals one chooses and skills one possesses. If so, then we are unlikely to see any useful generic "ethics knowledge management system" that can be applied in any profession or organization. Instead, we will need KM systems to incorporate a concern for the ethical aspects of action within each of the areas. In this respect, we might then say that "all ethics is local."

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Tables:

Table 1: Skills and Knowledge to support moral action (adapted from Huff & Rogerson, 2005)

1. *Moral Imagination*: Projecting oneself into the perspective of others.
    a. *Skills:* Constructing the relevant stakeholders in a socio-technical system; data collection about stakeholders; understanding stakeholder perspectives
    b. *Knowledge*: Specific knowledge about the domain (e.g. privacy, safety, equity); knowledge of socio-technical systems*;* knowledge of methods to investigate stakeholder perspectives
2. *Moral Creativity*: Generating solutions to moral challenges while responding to multiple constraints.
    a. *Skills*: Identifying value conflicts in a socio-technical system; constructing and evaluating solutions under constraint
    b. *Knowledge*: Specific knowledge about domains (e.g. privacy, safety, equity); technical knowledge of constraints and opportunities; knowledge of socio-technical systems
3. *Reasonableness*: Engaging in reasoned dialogue with openness
    a. *Skills*: Constructing data-based and reasoned arguments; engaging in reasoned dialogue, gathering relevant evidence, listening to others, giving reasons, changing plans/positions based on reason.
    b. *Knowledge*: specific knowledge about domain (e.g. privacy, safety, equity); technical knowledge of constraints and opportunities; knowledge of ethical argumentation
4. *Perseverance*: planning moral action and responding to unforeseen circumstances while keeping moral goals intact.
    a. *Skills*: Constructing and revising implementation plans based on organizational constraints. Negotiation within complex organizational environments
    b. *Knowledge*: Specific knowledge about domain (e.g. privacy, safety, equity); knowledge of socio-technical systems; knowledge of ethical dissent and whistleblowing