Caring About Knowledge: The Importance of the Link Between Knowledge and Values

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Abstract
This paper explores the connection between knowledge and values (which I call careabouts) and argues that knowledge modeling using AI techniques will be most effective in assisting knowledge managers if both knowledge and careabouts are modeled. The paper presents seven major claims; one business "case study" is used to illustrate each of them.

1. To manage knowledge, we must first understand that knowledge and values (careabouts) are intimately connected.
2. Epistemologists are increasingly aware of the knowledge-careabout link.
3. Recent work in cognitive science on the connection between reason and emotion also supports the knowledge-careabout link.
4. Knowledge workers create different lived realities.
5. Cultural diversity in the workplace accentuates these differences to the extent that cultural differences create differences in careabouts.
6. Creating and sharing knowledge-careabout models creates a new corporate reality of understanding and facilitates knowledge management.
7. AI technology can be used to facilitate the modeling of knowledge and careabouts.

Introduction
Let us accept, along with Peter Drucker (Drucker, 1993; Drucker, 1994), the premise that society is transforming from an industrial to a knowledge society. The future, then, belongs to the knowledge worker and the knowledge manager. Barring the complete automation of knowledge-intensive functions, this situation demands a comprehensive understanding of human knowledge-in-use. Consider first knowledge workers. They are hired because of what they know and their potential to be continuous learners. They are retained because they continue to gain and apply knowledge appropriately. Consider now the managers of these individuals. They are hired and retained because of their ability to foster continuous learning and to bring people and their knowledge together for productive performance. The practical demands of the workplace reveal that there is an intimate connection between knowledge and the values that individuals hold. I will call these values "careabouts," to distinguish them from so-called corporate values which are currently receiving attention.

Knowledge and Careabouts are Intimately Connected
Knowledge workers come to know what they care to know; subject matter which I don’t care about, I simply don’t learn. Likewise, what knowledge workers know (and don’t know) constrains what they can care about; I can’t care about problems that I don’t know about. What this means is that knowing isn’t sufficient for knowledge work. Knowledge workers must also care enough to apply their knowledge at the appropriate time in the appropriate way. They must also know when those opportunities arise. To manage knowledge-in-use, then, we must also manage careabouts.

A concrete example will serve to illustrate the connection between knowledge and careabouts. Bond analysts at a major insurance company underwrite bonds. They are college educated and have attended a company-sponsored "Bond School." The bond analysts are supported by Customer Service Representatives (CSRs), who are high school graduates with perhaps a little college education. CSRs have not been to Bond School. The majority of CSR time is spent on what they call "processing" — paperwork involving typing, mailing, renewing, billing and responding to phone calls regarding the status of bond submissions. The company was facing productivity problems, and wanted the CSRs to become knowledge workers, taking on some responsibility for underwriting. This would free the analysts to become more involved in sales and marketing. A knowledge analysis of the Bond Unit was performed to

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1The author was involved as an independent consultant in the work described here, the work was part of a major reengineering effort. Because of the strategic nature of this work, the client has requested anonymity.
facilitate an understanding of the knowledge required for underwriting, as well as the knowledge gap between the CSRs and the analysts. How much knowledge is required for underwriting? What would it take for CSRs to acquire that knowledge? Could the current CSRs become knowledge workers? Was the envisioned transition realistic?

For this project, six individuals were interviewed: four CSRs and two analysts. These individuals were selected by their supervisor as being representative of the Bond Unit as a whole. The interviews were audio recorded, transcribed and analyzed to develop models of knowledge, personalities and skills. Results from the knowledge analysis were used to outline training needs, develop hiring profiles, and determine the appropriateness of performance measures. Although the interviews did not focus directly on careabouts, the results of the knowledge analysis point clearly to their significance. In fact, one of the most striking results of the analysis was the discovery of two fairly distinct groups of CSRs -- those who cared about progressing along a career path and those who cared little for advancement.

Among the group which cared about career advancement, one CSR commented that "You have to have the desire to want to learn more and if you have that, really you can do it." Another was taking a writing course at night "so I will know how to speak; and I can do fine over the phone with an agent explaining things but not so well in writing." A third remarked that "Information does not filter to CSRs consistently... I keep my ears open so I know what's going on." Although these CSRs lacked the knowledge needed to take over minimal underwriting responsibilities, they cared enough about learning and advancing to make it likely that an opportunity or a requirement to go to Bond School would be received positively. Furthermore, it is likely that CSRs with these careabouts would be able to make the transition to knowledge work successfully.

Contrast this group with another group of CSRs who express a quite different set of careabouts. In this group, processing was the primary careabout, although there was some interest in the patina of advancement. "I don’t care if I do processing for the rest of my life.... I like it...but I still want to be a higher title," remarked one CSR. These CSRs would likely feel threatened by a requirement that they attend Bond School; at the very least, an offer of corporate sponsorship to attend Bond School would not be viewed as an opportunity. "I feel challenged with my processing" one CSR confides, and another discloses being content to work in ignorance of the meaning of the work being done. “I mean I would sit and type a 20 page submission for these guys, and I loved it... I’d just keep going and going...but I didn’t understand a word of it."

The knowledge analysis performed for this project clearly demonstrates the close connection between knowledge and careabouts. Bridging the knowledge gap between CSRs and analysts will require a significant training effort, but the effort will likely be successful only with the first group of CSRs. Although it may appear that it is just a difference in intelligence that divides these groups, I would argue that the situation is more complex than that. Although clearly capable of taking on underwriting responsibilities, one CSR remarks that “if we did...a lot of the underwriting, then we wouldn’t be able to process, and then that would, so...you know, I enjoy processing a lot more to be honest.” Knowledge workers will come to know what they care to know. Managing knowledge effectively requires understanding and appreciating this link.

**Recent Work in Epistemology and Cognitive Science Supports the Knowledge-Careabout Link**

Epistemologists have become increasingly interested in epistemics or applied epistemology, and along with this interest has come an appreciation of the contextualized nature of applied knowledge. Alvin Goldman has coined the term “epistemic folkways” to refer to our ordinary, commonsense epistemic concepts, principles and practices, and has suggested that elucidation of these “epistemic folkways” is “one proper task of epistemology” (Goldman, 1992, p. 155). While this is a step in the right direction, experience with knowledge work suggests new ways of understanding context. Knowledge workers introduce new elements to epistemics, not only because they work under time pressure with less than perfect information, but because they must put their knowledge into action. In addition to understanding epistemic folkways, then, we will also want to understand what might be called epistemic workways - the epistemic concepts and norms required by and expressed in knowledge work. We may expect that careabouts will be one of those concepts. Lorraine Code, a feminist epistemologist, points out that real knowers are embodied and situated in the world. She remarks that facts are not simply facts, but are an intricate weave of subjectivity and objectivity. “‘Truths’ have implications; they do not pertain in isolation” (Code, 1991, p. 72). Most significantly, real knowers are responsible for their knowledge; for them the statement “I know” has significant implications. As she puts it, a responsible attitude to knowledge and belief in general is manifested, in part, in caring about what one claims to believe or know. People for whom believing or not believing, knowing or not knowing, are matters of indifference are unlikely to

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1 While this company has automated knowledge functions in some areas, automated bond underwriting was not an option for this project.
meet even the least stringent requirements of epistemic responsibility (Code, 1987, p. 251).

In other words, real knowledge and careabouts are intimately linked, and successful knowledge managers will be those who recognize and learn to exploit that link.

Neurologist Antonio Damasio provides another interesting support for the knowledge-careabout link in his recent book, **Descartes' Error** (Damasio, 1994). Damasio describes the case of Phineas Gage, a railroad construction foreman in Vermont who suffered from a bizarre injury. In the summer of 1848, while blasting stone away to lay down new track, a premature explosion resulted in an iron bar being propelled through Gage's skull. Before the accident, Gage was described as a man of "temperate habits," a "smart businessman, very energetic and persistent in executing all his plans of action" (Damasio, 1994, p. 8). After the accident, although he was able to think and reason normally and his memory was normal, he nonetheless was a significantly changed man, "capricious and vacillating, devising many plans of future operation, which are no sooner arranged than they are abandoned" (Damasio, 1994, p. 8). Damasio also describes a similar case of one of his patients, a man he refers to as Elliot. The predicament of both men after suffering damage to the prefrontal area of the brain appears to be similar. As Damasio puts it, they had "the ability to know, but not feel" (Damasio, 1994, p. 45). Their brain injuries prevented them from "assigning different values to different options" (Damasio, 1994, p. 51). Although they could generate reasonable options for action and knew the consequences of each proposed course of action, they didn't act appropriately; they were unable to make decisions and act on them.

Damasio's studies suggest that reason and emotion are relatively distinct functions supported by distinct neurological systems. Damage to one system reveals the functionality of the other system operating alone. I suggest that reason and emotion map relatively straightforwardly into knowledge and careabouts. The moral of the story is that although knowledge will enable knowledge workers to generate appropriate conclusions about proposed decisions or courses of action, it is careabouts that enable knowledge workers to act on their knowledge. Managing knowledge for effective business performance thus requires managing careabouts as well.

**Knowledge Workers Create Different Lived Realities**

Knowledge and careabouts provide knowledge workers a conceptual organization which conspires to create a subjective component of their world. To the extent that knowledge and careabouts differ, knowledge workers create different lived realities. Imagine that the following memo is received by CSRs in the Bond unit described above:

In 1997, all CSRs will be able to participate in six weeks of training to prepare them to assume limited underwriting responsibilities. Please see your supervisor at your earliest convenience to schedule classes.

I contend that receipt of such a memo constitutes at least two very different events - an opportunity in the case of the first group of CSRs and a threat in the case of the second group. Likewise, responding to the memo by meeting with a supervisor, and attendance at classes will also be significantly different events for these two groups. Perhaps most importantly, the results of the occurrence of all of these events will be predictably different. The first group will transition relatively easily into the new knowledge-work environment, while the second group will transition with difficulty or not at all.

**Cultural Diversity Accentuates Differences in Careabouts**

Cultural differences can create differences in careabouts. Although research in this area is ongoing and definitions are difficult (exactly what counts as a culture?), it seems fair to say that different cultural orientations place different emphasis in the following broad areas (Carr-Ruffino, 1996, pgs. 31 - 88):

(a) Control - I control or I'm controlled
(b) Me first - us first
(c) Relationships - competing or cooperating; achievement first or people first
(d) Equality or rank and status
(e) Risk taking
(f) Time - linear or circular
(g) Space - close or distant
(h) Communication - direct or indirect

We can think of these areas as categories of careabouts. Consider, then, a few of the specific careabouts claimed to be typical of Asian Americans (Carr-Ruffino, 1996, p. 277). In area (b), the group is valued above the individual, and fairness to the group is considered more important than gaining wealth. Family ties are especially important. Harmony is more important than making money. Deferring to the wishes of others to maintain harmony reflects maturity. Modesty is important for all, but especially for women. Modesty is shown by avoiding drawing attention to oneself. Now imagine an Asian American CSR with these careabouts responding to the memo noted above. Suppose that classes will require a changed work schedule that interferes with time traditionally saved for family activities. Suppose that the majority of CSRs feel threatened by the "offer" and choose not to take classes. It seems likely that our imaginary CSR,
though perfectly capable of transitioning to the new environment, will choose not to. Of course not all Asian Americans hold exactly these careabouts, and those who do may hold them to different degrees. Careful interviewing and thoughtful analysis are essential to the development of models that are accurate and avoid stereotyping.

Although all of this may appear obvious upon telling the story, it was not at all obvious to those responsible for the Bond Unit. Not only was the size of the knowledge gap between analysts and CSRs poorly understood, but the discrepancy in careabouts among CSRs was not even considered. As a result of an analysis which captured both knowledge and careabouts, this client was able to develop appropriate training programs as well as review performance evaluation and compensation with an eye to connecting with the careabouts of current employees and hiring new employees with careabouts consistent with the new environment.

The general claim being made here is that workplace reality is a participatory phenomenon which has a subjective as well as an objective component. Knowledge and careabouts act as a set of lenses through which events are interpreted and decisions made. When the lenses differ, the reality differs.

Creating and Sharing Knowledge-Careabout Models Facilitates Knowledge Management

Having understood what knowledge in general is, large organizations must understand their specific knowledge assets. One way to do this is to model those assets, and this requires modeling knowledge and careabouts. As with any model, a model of knowledge and careabouts will be an abstraction, expressing the essential features of both components as well as their interaction. Knowledge-careabout models can be specific to individuals, but will likely be more powerful if they model patterns of knowledge-careabout links in groups of individuals such as a particular business unit. The sharing of these models is a sharing of multiple realities.

There is significant business potential in creating and sharing models which express the intimate relations between knowledge and careabouts. This activity has the potential to create a new corporate reality from multiple individual realities, because individuals and business units come to know and understand each other's knowledge and careabouts. Corporations undergoing this process are doing the equivalent of thinking; the models comprise a corporate cognitive model, and because they are shared, the corporation can be said to "know itself". We know that individuals who are self-aware are more successful than those who are not. Individuals become self-aware by introspecting, by looking deeply into themselves. The result of this process is a clear understanding of one's knowledge, careabouts, abilities, strengths, and weaknesses. Corporations will receive the same benefits.

This new reality of understanding can be evaluated by knowledge managers and, if desired, the understood reality can be changed. Change results from either (1) changing knowledge (e.g. filling gaps, distributing existing knowledge, eliminating the need for certain domains of knowledge), (2) changing careabouts (e.g. through new financial incentives, changed work schedules, changed job responsibilities), or (3) changing the relation between knowledge and careabouts (e.g. through linking existing careabouts to new ways of gaining or using knowledge). The inclusion of careabouts in the models provides the link between understanding and acting which is necessary if knowledge management is to yield practical results.

AI Technology Can Facilitate Knowledge and Careabout Modeling

Creative use of existing knowledge modeling tools can facilitate the modeling of knowledge and careabouts and facilitate the development of shared understanding. For example, object-attribute representation might be used to model hierarchies of values which include personal values (careabouts) as well as instrumental values (Rokeach, 1973) and corporate values. The representation may reveal conflicts, consistencies and inconsistencies which were hitherto unnoticed. The links between careabouts and knowledge domains might also be modeled; imagine a dynamic simulation of the expansion of worker careabouts as a result of knowledge acquired through various training efforts; workers can only care-about and attend to domains that they know about. Conversely, case-based scenarios might allow exploration of the impact of different careabouts on organizational learning and knowledge growth. Ideally, we might consider the requirements of a modeling tool specifically aimed at modeling the connection between knowledge and careabouts.

The project described in this paper used only static paper models; they proved to be a powerful and effective means of communicating the results of the knowledge analysis. I pose the following questions to those of us interested in applying AI techniques to this process:

What more could be done if the knowledge-careabout model was automated?
What more could be done if the knowledge-careabout model was dynamic?
What is the business value of automating knowledge-careabout models?

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