Toward collaborative technologies supporting cognitive skills for mutual regard

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Abstract: In this paper I elaborate on a promising link between ethics, thinking skills, and online collaborative tools. Cognitive tools used for communication and collaboration can be designed to support and scaffold ethically-relevant skills such as: cognitive empathy, the ability to take multiple perspectives, the ability to reflect on one's biases and emotional state, a tolerance for uncertainty, ambiguity, and change, and the ability to reflect upon the quality of a communication that one is involved in. These thinking skills contribute to the quality of knowledge building and decision making. I argue that an opportunity now exists to source this large body of related work to create a coherent R&D focus.

Introduction

Can technology help people develop ethical and moral skills and sensibilities? The question itself may seem alien or meaningless—technological innovations are usually assumed to be value neutral. Though it is true that a technology can be *used* to support any set of values, including both ethical and non-ethical means to an end, almost universally technology is *designed* to support values such as productivity, efficiency, accessibility, and connectivity. Can technology be not only be used to support ethical ends but be explicitly *designed* to support values such as mutual regard and self-awareness and enhance ethical ways of being?

In this paper I will elaborate on a promising link between *ethics, thinking skills,* and *online collaborative tools*. My treatment of "learning environments" will be geared to life-long learning contexts and communities of practice engaged in knowledge building and decision making (however, the principles are easily applied to student learning communities). By *ethics* I mean the simple moral concept of individuals or groups treating each other with mutual recognition and regard. My argument can be summarized as follows: (1) in the modern (or post-modern) world, being *ethical/moral* involves (not exclusively but importantly) a set of *cognitive skills*, including: the ability to put oneself in another's shoes (cognitive empathy), the ability to take multiple perspectives, the ability to reflect on one's biases and emotional state (a type of metacognition), a tolerance for uncertainty, ambiguity, and change (a type of epistemological understanding), and the ability to reflect upon the quality of a communication that one is involved in (meta-dialog). (2) Online *collaborative software* (or "cognitive tools") can be designed to support these skill sets by embedding certain protocols, structures, prompts, and other scaffolding devices into existing communication media. (3) More strongly ethical modes of collaboration improve the quality of *knowledge building and decision making*.

A broad interdisciplinary set of research projects and results can be seen as relevant to this thesis, but very few describe what they are doing in terms of this ethics/thinking-skills/collaborative-tools relationship. My purpose for writing this paper is to suggest that more can be done to bring these threads (ethics/thinking skills/cognitive tools) together and spark new R&D that could lead to technologies that demonstrably support mutual regard at both small (among individuals) and large (inter-group) scales. (Note: an extended version of this brief paper is available at [Murray 2007]; and also see the related Workshop description for "Technology Supporting Cognitive Skills for Ethics in Collaboration and Communication" in these proceedings.)

Ethics, knowledge building, cognitive skills, and online tools

Ethics and knowledge building. There are important links between ethical ways of being and knowledge building. As more and more of society's work (and individual's play) revolves around information, knowledge, and learning, the quality of knowledge building and organizational learning becomes more critical. In his work on communicative action and "discourse ethics" philosopher Jürgen Habermas claims that for collaboration to move us in the direction of more adequate (if still tentative) truths it must have certain properties that are fundamentally ethical/moral (Habermas 1993, 1999). These properties include: that sufficient mutual understanding regarding key concepts and assumptions is established; that all important or relevant points are heard; that dissenting opinions are

sincerely considered; that speech is honest and without hidden agenda; that the power dynamics of the situation are reflected upon; and that participants actively engage in opening up to the sometimes unsettling world views of others. Problems in any of these areas can result in systematic bias or distortion in the outcomes of knowledge-building. Thus, moral constructs such as freedom, equality, empathy, sincerity, inclusivity, reciprocity, integrity and mutual regard are deeply entangled with the knowledge building processes of discovering ever more adequate truths.

If we move beyond the scope of human endeavors implied in "knowledge building," we can find scholars studying an array of interdisciplinary concerns including business success, civic vitality, and psychological health, who make links to ethics-related constructs and the skills of care-full communication and collaboration. We will not go into these works further in this short paper, but simply summarize by stating the assumption that skills, habits, and attitudes related to basic ethical orientations are fundamental to individual and social success in numerous areas.

Ethics and cognitive skills. Exercising ethical capacities such as mutual regard involves a combination of intellectual, perceptual, emotion, motivational, and attitudinal elements. We use the broad sense of "cognitive" to cover all of these areas (as opposed to the narrow sense of "cognitive vs. affective"). The full spectrum of ethical considerations includes an ability to perceive the ethically relevant aspects of a situation (Vetlesen 1994); empathic capacities (Goleman 1995); and the desire, commitment, and will to act on ethical values (Taylor 1991). Thus, it is impractical if not impossible to try to operationally separate rational skills from emotional/social skills in this area, as both are so interdependent. The thinking and communicating skills/habits we are interested in include capacities to: 1) consider or try on the perspectives of others ("cognitive empathy"); 2) engage in productive dialogs of inquiry to build mutual understanding; 3) reflect on one's thoughts, values, biases and emotional states; 4) tolerate uncertainty, ambiguity, paradox, and change in knowledge and circumstances; 5) reflect upon the quality of a communication that one is involved in.

Elsewhere (Murray 2003) I have described ethical modes of interaction in terms of two general categories of skills/habits: perspective and integrity. The list of skills above are perspective taking skills. *Perspective* taking includes the abilities to "step out" to reflect on one's own thoughts or ideas, "step in" to (try to) see the world through another's eyes, and "step back" to take a systemic perspective on an entire situation. *Integrity* involves such things as transparency, responsibility, and accountability, which are essential to have a full account of being ethical. Integrity can be defined as follows in terms of maintaining *congruence* between: one's words and actions (doing what one says they will do); one's words from one situation to another (not saying contradictory things in different contexts); and one's inner beliefs/intentions and ones words (being honest and authentic).

This description of ethical modes of interaction is not meant to be exhaustive. It is given to sketch out the scope of the skills/habits I refer to as important to ethical ways of being. In this paper I will not define these skills precisely in an operationalized and measurable way, though such precision would be a prerequisite to empirical research and theory building. Metacognitive and epistemological sophistication are clearly woven into the skill sets mentioned above (and see [Basseches 2005] on dialectical thinking, [Kegan 1994] on subject-object theory, King and Kitchener [1994] on reflective judgment).

Technologies and contexts supporting ethics-relevant skills. The working hypothesis of this paper is that features can be added to existing forms of online tools (discussion forums, web sites, decision support tools, etc.) that will *scaffold and prompt* for the use of ethical skills/habits, and will thus support the *learning and adoption* of those skills/habits. Software can enforce or promote behavioral protocols and can reify (make explicit) social values and conceptual frameworks related to ethics. There are two complimentary types of outcomes. First, technology can enforce or structure *interactions* and communications so that users follow some protocol (but do not necessarily learn anything in the process). Second, technology can also support an *internalization* of skills and values, thus scaffolding learning as well as behavior.

Socially conveyed and intentional forms of learning are mediated through designed artifacts (Jonassen & Rohrr-Murphy 1999, Vygotsky 1978). Digital technologies afford unique opportunities to consciously tailor the medium/environment of communication to support certain values and habits in collaborative work (Winograd & Flores 1986). The ethics-supporting software features alluded to here are seen as most applicable to *well-defined groups with sufficient shared goals or values*. Such groups might include: employees of a company that orients strongly around ethical values; a community of scholars furthering some field of knowledge; participants in an international diplomatic deliberation; civic deliberation or conflict resolution forums; and fact-gathering volunteers

in an NGO. If those in a group's leadership role want to encourage certain values in the group, *and* there is sufficient buy-in from group members to engage in the learning curve of trying something new, then these collaborative technologies can play a pivotal role in transforming or sustaining ethically-sound thinking/practices in a group.

People do not always live up to their own expectations, standards, or competence levels in terms of ethical behavior. Depending on the context, the dynamics of group behavior can create least-common denominator results (such as crowd mentality) where group interactions lead individuals to act in cognitively and/or ethically degraded ways, or, alternatively, can lead to positive synergetic effects in which group interactions lead individuals to act with higher overall cognitive and/or ethical capacities (Surowiecki 2004). Key ingredients to creating "collective intelligence" as opposed to collective inanity are shared intention and a supportive environment or culture, which includes a group's communication artifacts and procedures.

Related Research and Projects. Research related to our concerns falls into several categories, such as: 1) *Research in cognition and epistemology*, including the unavoidable indeterminacies in concepts and models; research into so-called "bounded rationality;" and developmental studies of epistemic sophistication and its relationship to ethical reasoning. 2) *Research in communication theory and social linguistics* related to mutual understanding, mutual agreement, and mutual regard. Including research in applied hermeneutics, meme evolution, and argumentation integrity and fairness. 3) *Research on human emotional and social capacities*, both from brain science and from psychology. This research is important because of the strong emotional factors in developing relationships of high trust (with its concomitant vulnerabilities), attachment to tightly held beliefs, and tolerance and resilience to cognitive dissonance. 4) *Research in cognitive tools supporting dialog, knowledge building, and epistemic sophistication*, including research on fostering metacognition, self-regulated learning skills, reflective reasoning skills, "cognitive flexibility," and multiple perspective-taking. Online tools for democratic debate and public deliberation (so-called cyber-democracy and e-deliberation) are also being tested, and other projects study how trust, reputation, and credibility are built and measured in online environments. Finally, immersive virtual reality and role playing games are being developed on ethics-related themes.

Further reading and next steps. In [Murray 2007] I describe more specifically some of the software features alluded to here, give numerous references to related research, and describe orienting directions for the emerging field of technology for ethics-related thinking skills.

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