

REFLECTIONS ON RETHINKING AN “ISSUES OF COMPUTING” COURSE

Robert Joseph Skovira, Robert Morris University, rjskovira@att.net

ABSTRACT

The paper is an exploratory description of a way of linking the experiences of undergraduate CIS majors to a required course on global, economic, social, and ethical issues of computing. The essay describes some issues with teaching the course and a way of handling ABET accreditation requirements. The essay briefly gives some assumptions framing the course. The paper then briefly describes a course-reporting mechanism and some questions used to uncover moral frames. It presents the idea of a social contract (agreement) as a basis of moral framing and ethical theory. Finally, the paper concludes with reconsiderations of several aspects of the course. These envisioned revisions of the course include a more active and participatory case development, simplified reporting, in-depth discussion of articulated social agreements, moral framing questions, and the inclusion of ethical theories.

Keywords: ABET Accreditation, Issues of Computing, Computer Ethics, Moral Frames, Social Contract, Ethical Theory

INTRODUCTION

ABET accreditation has created a context for reinforcing or initiating professorial practices involved with designing a course that is part of an accredited program; the context is an insistence on the continuous redesign of a course and the documentation of the redesign. ABET is the Accreditation Board for Engineering Technologies that certifies and approves undergraduate degree programs in Engineering, Computer Science, and Information Systems. There are at this writing 15 accredited programs in the US. ABET also insists on the keeping of copies of student work for a course, with comments and grade. These reputedly are examined during a visitation. Mostly, they pose a storage problem and a copying problem. They are, I think, also inaccessible for research due to IRB restrictions unless you plan ahead and obtain permission and generate a confidentiality agreement at the beginning of the course.

Be that as it is, this paper is an exercise in ABET-inspired rethinking (and its documenting) of some

selective aspects of a course’s delivery and content. As part of this process, I have adopted my personal practice of keeping a course journal [10] and subject matter notebook [11]. The course journal is a semester-long record of preparing and self-debriefing specific to teaching the course. The subject matter notebook has a broader scope, dealing with studies of ethical theories as well as reflections on the subject matter. I have relied on these “field notes” to be “transaction logs” for this paper and a documented basis for rethinking aspects of the course. This paper is documentation of the rethinking. Consequently, this paper gives a brief course overview, looks at some assumptions, discusses a reporting instrument, talks about moral frames as a gateway to understanding ethical theories and their use in case analysis, discusses the role of social contract in moral framing, and finally looks at how ethical theory develops. The paper, being ABET inspired, ends with some envisioned revisions possible for the areas of the course discussed.

In the Fall 2005 semester, I taught for the first time our department’s ABET accreditation-inspired course entitled Global, Economic, Social and Ethical Issues in Computing. It is a required course in the curriculum, beginning life in the Fall 2004 semester. I used a text by R. A. Spinello [13] which presents a number of case summaries of legal court decisions about computing issues. The cases represent done deals. As a result, any classroom discussions would be attempts at uncovering tentative social agreements violated or moral positions compromised with subsequent debates of ethical rules.

The course is designed to focus on global, economic, social and ethical aspects of computing issues. It is a case-based discussion-oriented course. Computing issues refer to the impact of information systems and their technology on situations and society. While the course identifies global, economic and social states of affairs, it concentrates on the ethical even as the cases [13] are legalistic in their impact. Some of the issues are privacy, intellectual property, security and safety, liability, information access, freedom of speech, workplace (and elsewhere) monitoring, and information-based competition. The syllabus sequenced affairs in the following way: Discussion of global, economic, social, and ethical frames (treated

in more detail later), discussion of introductory questions, discussion of social contract (agreement), discussion of ethical frames (in details), discussion of cases about free expression in cyberspace, intellectual property issues, privacy and information access, security and cybercrime, liability and safety, fair competition and Internet access.

A global framework was introduced as a means of situating future classroom discussions of the various cases. In this, I followed Friedman [3], attempting to show the internationalization of industry and commerce (even in these days of post 9/11/2001) and the localization of individual well-being. An economic frame of reference was introduced so that the costs and benefits of a particular case's results could be discussed. A social frame was introduced so that possible changing of social norms that might result from the cases could be discussed. These frames provide contexts for evaluating the various cases.

There were two class sessions per week: the first was devoted to answering questions (which every student had to include in the EAR [Ethics Assignment Report]) and minilectures overseeing conceptual frames and ideas for the week or showing the intersection of the global, economic and social frames on the subject matter. The second class session was devoted to small-group discussion and then expanded to a large-group (class) discussion of the positions taken by the various small-group discussants. The class sessions were organized to maximize informed discussion. To begin a discussion session, the student individually would respond to a specific question, based on the EAR document, such as "Do you have a right to privacy?" This was to "prime the pump." With the results of this exercise and their EARs in hand, the students then circled in small groups for a discussion that was also focused by a question or two, e.g., "What are the elements of privacy?" and "Is privacy a basic human and social affair?" The group documented their group response in writing (to be handed in and eventually collected in an ABET-inspired storage box.) These results were then debated in a whole-class (open forum) environment.

FRAMING THE ENDEAVOR

I thought that trying to introduce the students to their own moral frames, and to "social contract(s)" [8] that surround these frames, would allow for a certain kind of linkage to the more formal ethical theories. This putative relation (from social agreement and moral frame to ethical theory and principle) would allow an

integrative approach to analysis and debate of the cases. The case analysis and discussion may be more interesting.

I make a few assumptions when teaching an ethically-oriented course. First, there is a difference between morals and ethics and a person acts morally within silent unarticulated moral theories-in-use or frames. Third, an ethical theory is the formal development and elaboration of propositions concerning the nature of moral action and the nature of a moral situation. Ethics is a formal conception and different ethical theories assume different moral frames. Furthermore, different moral frames assume differing practices of enculturation and socialization [11].

The course, as I taught it, assumed that tacit moral frames govern a person's response to the issues raised by the cases, and that formal ethical theories are grounded in moral frames (tacit) used to judge actions of self and others. The course also presumed a view that there is a social contract or agreement [1, 8] which provides the affordances and constraints framing behavior. From birth, people are surrounded by enduring and stable systems of shared meanings, agreements and arrangements. Growing up in families (however constituted), going or not going to a church, temple, or synagogue, going to school, joining groups or gangs, learning a profession, and working inside an organization have all contributed to shared meanings about appropriate ("good" or "right") actions and relationships [5].

A REPORTING MECHANISM

Spinello [13] provides a method of ethical analysis as well as discussion by suggesting three stages: figuring out one's moral intuition, framing one's thinking by a theoretical ethical position, and reflecting on possible "public policy" impact. To reflect the course framework of global, economic, and social implications of the cases, I developed an essay format which I called Ethics Assignment Report (EAR). This report maintained Spinello's categories but provided categories suitable to the course's focus. This format first consisted of the categories: Moral intuition, The ethical theory with which you are comfortable, Global implications, Economic implications, Social implications, Legal implications, and Public policy implications. Finally, students were asked to create a question that raised an important issue about the case. As the course moved along, I changed and added a few items: Brief abstract of case; Your moral judgment: right or wrong in your view; The ethical rule to judge this

case; Global implications: cultural conflicts etc.; Economic implications: benefits and costs; Social implications: changing (unchanging) *mores*, values or norms; Legal implications: new laws; Public policy implications; and An article summary supporting the case and one arguing against the case [10].

UNCOVERING THE MORAL FRAMES

Frames are perceptual and conceptual habits, generally unconscious and tacit, that afford and constrain actions by formulating and structuring the whats and hows of reality. Frames are theories-in-use. They provide ways of making sense of things and ways of interpreting things. They are filters as well as lenses, differentiating between stuff to notice, and stuff to ignore. Frames are usually silent and implicit, but become explicit when others “violate” them. Frames are evaluative and organizing perspectives, learned habits representing the enduring and stable systems of meanings shared and learned through socialization and enculturation [4, 2, 9]. Frames are moral frames when they raise the specter of what is good and evil. Of course, global, economic, and social frames often refract the light (of reason) slightly differently.

Spinello [13] begins his text with a chapter on ethical frameworks. In a brief (24 pages) chapter, he presents several teleological and deontological ethical frames and raises the question, “Why be moral?” initiating a brief discussion about moral intuition. He maintains this notion of moral intuition in his method of case analysis. To have students deal with the idea of moral intuition was to try to have them come to grips with what intuition is and perhaps its grounds. To do this, I asked some questions to uncover the “intuitive” moral frames. My assumption for the course was that moral intuition is learned within the family and its environments of ethnic group, customs, religious practices and linguistic patterns. There are social agreements about how to act with family members and with nonfamily members, friends, and perceived outsiders. Moral intuition may not be an innate knowledge of what is good or evil; conscience may be a sociocultural piece of work (there now is some debate as to the genetic basis of altruism). My reason for beginning the class with these questions was that everyone has a theory about the appropriateness of behavior, presuming tacit (intuitive) rules by which actions are judged and justified—self activity being justified and other activity being judged.

The responses to the questions were observations and stories uncovering the silent and taken-for-granted normative judgments of everyday practices, actions, and language use in situations. The introductory

questions for uncovering moral frames[10] are as follows:

- Have you ever thought that someone else ought to have apologized to you or someone else?
- What “ticks” you off more than usual when dealing with others?
- What is your usual “take” about others?
- What is your “concern” (if any) when doing things online? Using email?
- Have you ever used the term “good”? How have or do you use it?
- Have you ever accused someone of being “unfair”? How did you know the person was being unfair?
- What expectations do you have when dealing with friends, fellow students, parents & family, professors, others?
- Do others have expectations of you?
- Do you have expectations about yourself?
- What are your “takes” on the ANU “Civility Code” after reading it? Before reading it? (One of the 8 points of the “Civility Code” is “I will devote myself to becoming an enlightened student, without compromising myself by lying or cheating in my academic endeavors”).

Student responses to these questions were the basis for the first EAR (the questions became report categories) and a basis for classroom discussion. During the discussion, students focused on the first question of the list, especially being concerned about the intentions and the actions [10].

GROUNDING THE NORMATIVE DIMENSION OF THE MORAL FRAMES

The next part of the course introduced the students to the idea of social contract (which I have come to call social agreement) [10]. I introduced this idea via an article [8] with additional research from the Internet and library on the student’s part. A social contract consists of the tacit affordances and constraints of a social network, organization or society. There are the unspoken and taken-for-granted but shared meanings, language, concepts, and knowledge that contextualize shared values and principles of relationships. A social agreement (contract) is the taken-for-granted trust that acts as a moral and social foundation for creating social order and a moral ecology [1]. It is the foundation of any social group and affords the generation of moral frames and ultimately ethical theories. Perhaps, its most tacit and generalized principle is summed up in the phrase: *non nocere* (to do no harm). It is the basis for any justification and explanation of actions in terms of their consequences

or their obligations; in other words, it is the ultimate normative or principled determinative context of good or evil [8]. Codes of ethics, of civility, the US Constitution, are articulated social agreements. Later, in the case studies on privacy and intellectual property, the notion of social agreement was reintroduced as a tacit social agreement which supported the US Constitution (which the class read) as an articulated social agreement and which framed the classroom discussion on privacy and intellectual property and even freedom of expression [10]. (I write this even as there are riots over inappropriate [there are no appropriate ways, it seems] depictions of Mohammed).

ETHICAL THEORETICAL PERSPECTIVES

A formal ethical theory is an articulated theory-in-use. Theories are descriptive explanations and justifications of behavior. Any formal ethical theory that a person may claim to espouse is grounded in a social agreement (although not deterministically) and in a person's tacit moral frame. A person will have a certain affinity for a particular ethical frame that justifies actions and relationships. Spinello [13] discusses briefly three primary ethical frameworks. They are a teleological theory: utilitarianism; a deontological theory: Kantianism and a Rossian take on this; and a rights-based perspective: basically contractarianism.

These ethical theories provide the principle or rule by which the case results were to be judged. Utilitarianism is commonly defined as a hedonistic and consequentialist theory presenting a universal principle that an act is right or good if it causes the greatest pleasure or happiness for as many people as possible [6, 7]. Deontological (duty-based) ethical theory commonly states that a person is obligated to do good, and that an act is right (good) if it is right (good) in and of itself, and a person knows this intuitively. Kant's categorical imperative universalizes this principle of ethical judgment [6, 7, 12]. Rights-based ethical theory is an approach based on putative entitlements usually anchored in an articulated social agreement (e.g., the US Constitution) or in natural law [13]. Because these ethical theories were genealogically grounded in an understanding of the contextualizing influence of a "common" social agreement and "personal" moral frame, a student's understanding and use of a particular ethical theory's principle to judge a case was more substantive.

CONCLUSIONS AND ENVISIONED REVISIONS

No ABET-inspired description and analysis of a course is any good without some possible changes to the course that reflect a search for excellence. I have always thought that every chance to teach the "same" course was a chance to understand things better and to try to do a better job of it. So, the following items are considerations for redesign of the course in Fall 2006.

Course Content – Case Studies

I plan to "free lance" the case-orientation of the course by having students actually assemble the "cases" from library and Internet resources. These will be done by student teams who will present the case as a basis for class discussion; possible examples may be blogs and privacy, the Patriot Act and privacy, Blackberry technology and intellectual property, Internet security and identity theft. By having students actively pull the cases together, global, economic, and social implications can be developed more easily. Students will develop the cases according to a structure and format. A rudimentary structure might look like a summary of the issue presenting pro and contra perspectives incorporating the global, economic, and social ramifications. Part of the mix may be any legal issues and court cases.

Report Mechanism - EARs

The structure of an EAR will be simplified to deal with the case presented from a personal point of view yielding a formal ethical principle, with an attending class question. The report will maintain its role as a preparation for in-class discussion of the issue. A better heuristic or protocol for responding to the reports will be developed.

Global, Economic, and Social Frames

I plan more exposition on the global, economic, and social frames and implications so that students will be able to integrate these more reflectively into their analysis and discussion of the cases.

Social Agreements

While there appeared to be an adequate presentation and discussion of the idea of a social agreement (contract), a more in-depth discussion of RMU's Civility Code, ACM's Code of Ethics, and the US Constitution will be a feature in the next teaching of

the course. The in-depth discussion will attempt to clarify the role of articulated social agreements in the life of the community, profession, and society.

Moral Frames

In the next envisioning of the course, I plan to use only one question: Address the need (psychological, social, moral) for apology for one's behavior. This will allow for an expanded discussion of the nature and role of moral frames in terms of afforded or constrained behavior.

Ethical Theories

Further rethinking of the course content suggests that discussion of formal ethical theories ought to include character and virtue theories. It is also necessary to add explicit discussions of some meta-ethical ideas about meanings and justification, as well as the place of values in the discussion. Because there are some exciting things happening, and cases can be developed ad hoc, I will probably not use Spinello again.

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