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# The Development Of The 'Ethical' ICT Professional

And The Vision Of An Ethical On-Line Society:  
How Far Have We Come And Where Are We Going?

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## Abstract

It has been a decade since Computer Ethics came into prominence within the field of computer science and engineering, changing not only the profession but the classroom as well. The commercialization and globalization of the World Wide Web has impacted us all, both producers and consumers alike. What was once the province of the few has become the virtual society of the multitudes. Ethical issues concerning security, privacy, information, identity, community and equity of access once contained and localized, have assumed additional complexity in the global environment. Every day, the front pages of our newspapers and magazines report violations of one sort or another.

This paper will address two questions: As we move into the 21<sup>st</sup> century, how can we shape 'ethical' information communication technology (ICT) professionals? And, is our vision of an 'ethical' global on-line society a realistic one?

Keywords: Virtue Ethics, Global Community, Global Information Society

## 1. Introduction

It has been a decade since Computer Ethics came into prominence within the field of computer science and engineering, changing not only the profession but the classroom as well. The commercialization and globalization of the World Wide Web has impacted us all, both producers and consumers alike. What was once the province of the few has become the virtual society of the multitudes. Ethical issues concerning security, privacy, information, identity, community and equity of access once contained and localized, have assumed additional complexity in the global environment. Every day, the front pages of our newspapers and magazines report violations of one sort or another.

This paper will address two questions: As we move into the 21<sup>st</sup> century, how can we shape 'ethical' information communication technology (ICT) professionals? And, is our vision of an 'ethical' global on-line society a realistic one? The first part will examine the education of 'ethical' ICT professionals who will be instrumental in the integration of com-

puter technology into 21<sup>st</sup> century society. It will also focus on the changing role of the professor of computer ethics and the usefulness of ethical codes. The second will focus on the vision of an ethical on-line society.

## 2. Development Of The 'Ethical' ICT Professional

The ethical 'self' is one with a moral horizon. He/She has a firm sense of who he/she is and a moral framework within which to make judgements. The ethical self is an evaluative one with a history based on a personal story, a narrative. Part of this narrative develops in relation to others within society, culture, and family. Education and social constraints of the surrounding community define acceptable moral behavior for the individual within this physical sphere. What happens when these constraints are removed as they are in sphere of the Global Information Infrastructure/Society (GII/GIS)? Will the ICT professional be ethical and act in a responsible manner? Education of ICT professionals, which involves training in the virtues, reinforces the concept of the ethical self: one who cares about the good of the community as well as him/herself.

### 2.1 Education of ICT Professionals

Early on, Joseph Weizenbaum asserted that a person involved in computer technology is first and foremost a human being, one who should seek humane solutions to human questions [1]. In computer science education, this imperative has translated into the incorporation of character-forming theories of ethics into the computer ethics curriculum. Whereas once Kant and Mill predominated, recent computer ethics texts have seen the inclusion of Aristotle and virtue ethics. To the extent that education in the virtues probes us to consider questions of the kind of persons we wish to be in order to live well in our societies, it provides us with more resources than its alternatives for addressing moral problems in the field of ICT. In insisting on the centrality of education in the virtues, it provides the most promising avenue by which we might learn to live in harmony, both in our local and in our on-line communities.

From an Aristotelian point of view, the development of technology should contribute to the quality of life in society. James Moor writes, "In Aristotle's view there is a teleological justification for producing more technology, and this teleological justification requires that the technology be of the right kind [2] one that supports human flourishing. For the ICT professional, the power of this technology and the powerful responsibility associated with its impact on human life should go hand in hand.

One consequence of this vision of the moral life is that no sharp distinction can or should be drawn between 'personal' and 'professional' actions. Users of ICT should focus on the foundations that underlie their personal and professional choices. In virtue ethics, these foundations lie in the development of ethical dispositions and moral character. One cannot separate the professional and private spaces in the integrated self. Virtuous action is not something that is externally imposed. It comes from within as one pursues the 'good' life, which is both 'personal' and 'professional'. The extension of this vision to on-line society seems a more promising route than one that relies solely on rules. Asking a group of multi-cultural professionals to abide by a set of standards that might contradict their cultural ethics creates a dichotomy in the personal and professional self. Education in the virtues is one step in insuring that the ICT professional is an integrated self who will try to offer humane solutions that cut across cultures and national boundaries.

## 2.2 Changing Role of the Professor of Computer Ethics

Ideally, when the first computer goes into the primary school, students should be taught acceptable on-line behavior just as they are taught to be techno-experts. If this practice were carried out throughout the early years of school, I am convinced that we would have fewer problems on-line. When these students arrive at the university, they would already be well informed about what constitutes virtuous on-line behavior and prepared to discuss seriously the macro or policy issues of computer ethics with more insight and sophistication.

Unfortunately, the students of today have not had this experience. They are living more fragmented lives and many of their personal relationships are computer-mediated. The fact that users of computer technology can get away with acts on-line that they never would try face to face, affects their concept of accountability and commitment to others and society. The notions of alienation and meaninglessness that are associated with the contemporary self translate on-line into crackers, people who commit unethical acts anonymously, those who hide their identity behind the facade of a computer persona and those whose idea of reality is virtual.

How do professors of computer ethics approach these problems? We become involved in both the technical and the moral education of students around the use of computer technology. The professor of computer ethics leads his/her

students to consider not merely technological but human and social consequences of their actions. As moral mentors, we create a safe-haven in the multi-cultural computer ethics classroom for students to examine their beliefs. Discussions and debates of values presented by students of different backgrounds offer a microcosm of the professional global world of the Global Information Infrastructure/Society (GII/GIS). The morally maturing self is allowed to move through "a procedure of trial and error, elimination, and engagement wherein one tries out one's own theories and ideas in order to uncover their inadequacies [3]. Virtue ethics can become the guide for this process. A person educated into the virtues understands that in choosing certain kinds of actions and rejecting others, she/he is involved in a process of becoming a certain kind of person [4]. Ethics involves more than obeying externally imposed rules. It is more fundamentally about becoming a self for which things matter and about becoming a person of integrated excellence.

## 2.3 Educating in the Virtues

One advantage of approaching applied ethics through the lens of the virtues is the substance it gives to formulations the self. It provides the tools for articulating what makes a good life and how to develop an excellence of character. From a virtue ethics approach, an individual is first expected to wrestle with his/her vision of his/her place in the world. Prior to trying to answer the question "what should I do?" an individual must address the question "who am I?" Prior to attempting to solve ethical dilemmas, a person must address the question of the kind of person he/she needs to become to be able to live well. From a virtue ethics perspective, what an individual ought to do in a situation cannot be abstracted from the kind of person he/she is and wishes to be.

To this end, it is more productive to ask, "Which actions that you have taken have had an impact on making you the kind of person you are?" Questions such as "What virtues can be exemplified on and off-line?" "For what kinds of things do you wish to be known?" "How do you want to be characterized by others?" "What responsibilities do you have to yourself and others when using computer technology?" "Does legal necessarily mean ethical?" and, "Does anonymity free you from moral accountability?" shift the focus from quandaries and onto the self. These sorts of queries ask users to consider seeing ethics in a different light. A person educated into the virtues understands that in choosing certain kinds of actions and rejecting others, s/he is involved in a process of becoming a certain kind of person.

A consequence of this understanding of the moral life is that a strong sense of self makes it possible to accept and attribute moral responsibility. The world of the GIS/GII with its anonymity is particularly prone to those who wish to evade responsibility for their actions. Comparing on-line situations to face-to-face encounters often reveals subtleties that need serious critical reflection. Cyberspace provides a par-

ticularly convenient medium for persons who wish to act in ways for which they will likely not be held responsible. Education in the virtues is one important part of the response to this disturbing aspect of computing.

What we are trying to impart to students is that power necessitates responsibility and accountability. As James Moor reflects in "Reason, Relativity and Responsibility in Computer Ethics", we must respect others and their core values. If we can avoid policies that result in significant harm to others that would be a good beginning toward responsible ethical behavior [5].

In order to encompass the global nature of the world of ICT, we should try to teach values that cross cultures. Before asking our students to examine the complex and novel issues of computer technology, we must first ask them to examine themselves as human beings with values that motivate them to live their lives in a particular manner. Moor states that there are sets of core values that are shared by most humans. He cites life and happiness for humans and includes other core values such as ability, freedom, knowledge, resources and security. "These values", he says, "are articulated in different ways in different cultures but all cultures place importance on these values to some extent"[5]. Basically, they give us a common ground for evaluation and understanding. This is particularly evident in the multicultural classroom where students are excited to find a mutually common ground amidst their different politics, cultural mores and religious traditions. I would also like to assert that it affords the computer ethics professor a means of examining human behavior and illustrating examples of living well, respect for others and flourishing in the true Aristotelian sense of the word.

#### 2.4 Codes of Ethics

In the past decade, the response of many professional organizations, universities and companies to the ethical problems associated with computing technology has been to write a code of ethics. There are two questions concerning codes of ethics that were posed early-on by John Ladd in his article "The Quest for a Code of Professional Ethics: An Intellectual and Moral Confusion." He asks: 1) are they a serious ethical enterprise, and 2) if they do exist, are they useful? Ladd argues that,

Ethical Principles ... are not the kind of thing that can be settled by fiat, by agreement or by authority. To assume that they can be is to confuse ethics with law-making, rule-making, policy-making and other kinds of decision-making [6].

Then why do these codes exist at all? They are attempts of professional societies or companies to guide the behavior of their members. On one hand, codes are a statement to society that the profession cares about ethical issues. On the other, they are codes of behavior that reflect the values espoused by the profession. However well intentioned it might

be, a code is not enough. Members of a profession must be committed to the values of the code for it to be meaningful. In order to follow a code of ethics, users must have strong internalized values. After all, the tribes of Israel were made to wander in the desert for forty years after Moses gave them the Ten Commandments in order to raise a generation under this code.

A profession should not be fooled into thinking that in creating a code of ethics it has resolved its ethical and moral problems. That would only be paying lip service to an area that deserves serious attention.

"Are these codes useful?" Sometimes they are, but having a code does not guarantee moral practices. If a person is not of good character to begin with, why would he/she subscribe to such a code in his/her method of moral deliberation? Or, for that matter, would there even be moral deliberation? To be meaningful at all, codes of ethics need to presume, a priori, that the profession is populated with persons of good character. Only then can these guidelines help direct actions in situations where people may not know what to do. This is especially true given the complexity of the problems posed by ICT.

The ACM Code of Ethics, IEEE Code and lately the Software Engineering Code have responded to Ladd's initial critiques by including general moral imperatives that focus on the well-being of society, trustworthiness and honesty of the individual, fairness to and respect for others and acceptance of responsibility. The combination of normative and virtue ethics moves the industry in the direction of a more integrative model of computer ethics and sends the message that the 'ethical' ICT professional is an extension of the ethical self and is valued by the profession.

### 3. A Vision Of On-Line Society: Towards A 'Good Society'

From a narrow technical viewpoint, it is easier to see the world of the Global Information Infrastructure, the backbone of an on-line society, as a set of networks passing packets of data across media to the global community without any moral component. This definition may be technically accurate, but it fails to attend to the true significance of this technology: as the dynamic "information superhighway" of the world. As such, it contributes to human well being. Locally or globally, business transactions, e-commerce, teleconferencing, telecommuting, database searches, email, research, collaboration, chatting and recreation are all human activities that should serve human needs and aspirations. How can this best be done? The attempt to impose 'rules', while it might be part of the response, is both conceptually inadequate, and standing by itself, patently impracticable. Who should make them and how should they be enforced are the overriding questions? The Internet Corporation for Assigned Numbers and Names (Icann), the new international over-

sight body for the Internet, was created to set standards and privatize the Internet. Recently, it came under criticism for endorsing a controversial global framework for resolving disputes over what words can be used in Internet addresses. In addition, the group wants to levy taxes and charge licensing fees for the dispensing of Internet addresses, in order to finance its budget [7].

The reaction to Ican policy decisions has been fierce. Critics say that it is overstepping its authority. In addition they fear that “the Internet, which is built on a cooperative technology for routing data around the globe, is in less stable hands increasing the risk that angry factions will in effect secede from the network, damaging its integrity by splitting it into several smaller, disconnected networks” [7]. This would have a devastating effect on e-commerce and collaborative enterprises.

The attempt to impose rules that are applicable to all users of this global network has generated an aura of mistrust and anger that is clearly anti-community. Users resent that a standards-setting group has tried to become regulatory.

### 3.1 Global Community: An Oxymoron?

Examining the history and evolution of the Internet, we are struck by the strong communitarian ethos that governed it. What do we need to continue to have the existence of community? We need members who are willing to sacrifice some individual needs to those of the group and who share values and commitment. Originally a collaborative enterprise that involved pioneers in the computing field, the Internet extended research possibilities, shared resources and was self-regulated by the community that was committed to these values. Whereas much of contemporary Western society espouses an individualism in which the person is autonomous and exists prior to the society, a view based on a strong conception of the common good usually supposes that humans are fundamentally social beings. Individuals do not simply enter into a ‘social contract’ because it has advantages for the autonomous individual. From the common good point of view, this good forms the basis both for the society’s demands on the individual and the individual’s claims on society. All individuals can be expected to contribute to society, and society has a general obligation to support all its members. This view was fostered on the Internet and continues to be embraced by proponents of ‘free software’ such as Richard Stallman.

The evolution or revolution (given its speed) from this small community to the World Wide Web (WWW) brought with it many of the problems inherent in society. First and foremost, a small group with shared values no longer controls it. It has become a pluralistic society comprised of different groups and different cultures often with conflicting values. An ICT professional now has to consider the impact his/her technology has not only on his/her local environ-

ment but on the multi-cultural global environment as well. In addition, the availability of the WWW affords access to many and responsibility to none adding to its ethical problems.

The desire to control on-line society has resulted in a conflict by those who attempt to regulate by law and those who seek to preserve the values that worked so well in the Internet community. Can we establish a meta-ethic on the WWW that will protect its continued development as a global community; or, do we abandon this vision as too utopic and concentrate on developing a formal overriding structure and policies to regulate it? If so, from where should they come? Will we cede control to the power brokers that advocate for their special interests without concern for the welfare of the people? Those who mistrust Ican believe that “the board is working behind the scenes with powerful international corporate and government interests to create a top-down hierarchy that flies in the face of the free-wheeling, consensus-based spirit that built the Internet” [7]. Langdon Winner suggests that we “...take complex communitarian concerns into account when faced with personal choices and social policies about technological [8]. These innovations need to be judged in the light of moral and political consequences. Those who are seriously involved in conceptualizing policy for this global space should make ethical and social issues a primary concern. To this end, they might have to integrate models that work in an open pluralistic society with those that have a strong moral component.

### 3.2 Discourse Ethics

It could be argued that Habermas’ model of discourse ethics might be promising when trying to establish policy for on-line society, because it outlines the procedures by which norms are established free of coercion and free of distortion by cultures. Yet as David Rasmussen points out, “Whereas a discourse ethic can outline the procedures by which norms are established, it lays no claims to the articulation of particular values” [9] and thus, may be limited as a foundation for a global moral society. With the Habermasian model, “a norm of action is to be considered legitimate only if all those possibility affected would, as participants in a practical discourse, arrive at an agreement that such a norm should come into or remain in force [10].” Anyone with access, capable of discussion and who will be affected by the norms must be allowed to participate. One focus of ethical behavior is the relationship of the self to others. Yet, the fact that you do not have to be yourself or can be anonymous throws into question the sincerity of relationships and the commitment of the individual to the on-line community or the process of consensus.

Is this dynamic model practical given the huge number of legitimate participants or stakeholders on-line? Or, if we limit the participants, are we violating the model and privileging certain groups? Would they be national subgroups, or

professional ones? I cann membership includes telecommu-  
nications executives and academics from the United States,  
Europe, Asia, Australia and Latin America [7]. Do they re-  
ally represent all the users of the WWW? Can we be assured  
that they can balance their own interests with a sense of  
values that contribute to the good of all?

Another question, that reflects the critique of some neo-  
Aristotelians, is how can we attempt to totally divorce our-  
selves from a culture that is a part of who we are, in order to  
agree on a set of norms? And, how do we apply these norms?  
Do they grow out of real life to be tested in a virtual society?  
Jean Cohen, in her essay entitled "Discourse Ethics and Civil  
Society", suggests that Discourse Ethics might provide a way  
to determine the boundary between morality and political  
justice. If we restrict its relevance to "questions of demo-  
cratic legitimacy and rights, it leaves room for a variety of  
moral principles in the private sphere "[10]. I applaud Cohen  
when she states that "...discourse ethics and moral self-re-  
flection represent two pillars of ethical life irreducible to  
each other" [10]. In educating 'ethical' ICT professionals we  
are supporting one pillar of the GII/GIS and laying the founda-  
tion for a moral discourse on-line.

### 3.3 The Next Step

I maintain that the role of shared core values should be in-  
cluded in a discussion of the structure and policies for on-  
line society. If we subscribe to Habermas' model, we arrive  
at these by consensus. Moor suggests that core values are  
common to humans and grow out of their social interac-  
tions, although he leaves the particularization of the culture  
aside. "These values", he says, "are articulated in different  
ways in different cultures, but all cultures place importance  
on these values to some extent" [5]. A neo-Aristotelian model  
would suggest that these values grow out of and are particu-  
lar to a culture. Communitarians value the common good.  
Which model do we choose? Are we limited to one? Are  
these more than procedural disparities? Will we be able to  
incorporate the substance of moral values/virtues into GII/  
GIS policy irrespective of the process? Or, we will get bogged  
down in a procedural debate that never reaches substantive  
issues? This is a subject for further research.

Until these questions are resolved, however, I subscribe  
to teaching core values and virtue ethics as a way to instill  
virtues, which can be used to evaluate our actions and poli-  
cies on-line. They provide a context for favoring some courses  
of action over others and for judging the activities of others  
as well. As Amitai Etzioni writes, "It is not enough to indi-  
vidually be able to tell right from wrong as crucial as this is.  
We must also be willing to encourage others to attend to  
values we as a community share and ought to actively seek to  
uphold" [11]. Moor asserts that "If we can avoid policies  
that result in significant harm to others that would be a good  
beginning toward responsible ethical behavior" [5].

## 4. Conclusion

The realization of the 'ethical' ICT professional should begin  
with the education in core values and virtue ethics. If we  
wish to advance a computerized society that will promote  
the both the human good and the common good, it is im-  
portant that it be populated with professionals who have a  
moral horizon. Ideally, the 'ethical' ICT professional should  
understand and promote the social, societal and cultural as-  
pects of technology both on and off-line. Why would people  
who are not of good character give any consideration to the  
development of an ethical GII/GIS? Both codes of ethics and  
ethical consensus based on dialogue presuppose and require  
not just rational computer scientists, but virtuous computer  
scientists. At the very least, response to the codes and activ-  
ity in the dialogue presuppose some virtues  
(Acknowledgement).

Can a moral dialogue take place concerning the struc-  
ture and policies of on-line society? I agree with Etzioni who  
believes that when trying to set policy there is a role for  
reasoned argument as well as moral dialogue in sorting out  
underlying values [12]. Computer professionals, those of us  
creating technology, need to define and communicate our  
mission vis-à-vis humankind. If normative codes have a place,  
they should be rooted in existing moral practices. The WWW  
is no longer uncharted territory without a need for common  
moral values. I fear that without moral dialogue, we will lose  
all sense of shared community values. If we focus only on  
normative models, we will be sacrificing the hope of a 'good'  
society for merely a civil one. ♦

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