Ethical Computing

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INTRODUCTION

Not doing the right thing right impinges on the continuing *cyber-abuses* and is, in turn, impinged by the *misinterpretation of risk* and the *flawed contemporary science/technology education*. Cyber-abuses are not only non-stopping but also being transformed from hacking for fun, through cyberbullying for personal vengeance and identity theft for profit, to cyberterrorism for political purposes. Furthermore, the cyber-attacks which are considerably ever more sophisticated are continuing raging through every corner in civilized communities despite the *extant countermeasures* (be they physical and logical access control mechanisms or legal means).

Something is needed to deal with the current state of affairs which attribute to two major factors. The first is the *misinterpretation of risk* and the *flawed education of science and technology* just mentioned. The second is the urge to take care of the increasingly complex social interactions accelerated by the new and more sophisticated technologies such as the web which enables "a wider system of human interaction [and] has profoundly affected society" (Hendler et al., 2008, p. 83).

That something is arguably Ethical Computing, a practice grounded in Computer Ethics which aims to establish and promote professional conduct and ethical standards. As a subject in Computing, it is somewhat akin to Green Computing, Mobile Computing and Cloud Computing but different and unique in its own right, and is expected to be of interest to Computer Scientists, educators, and practitioners as well as anyone who may be interested in techno-socio issues and the general readers.

BACKGROUND

Misinterpretation of Risk

Risk is in fact a managerial concern and should be evaluated in social as well as technical terms. Hence, it is a mistake to treat risk as a technical entity and measured in economic terms only. The technical, economic and social aspects should be recognized in order to give a holistic view, and all aspects should be given equal priority and evaluated holistically.

Flawed Science/ Technology Education

It is a flaw that teaching/training concentrates only on hard specialized knowledge and skills, and instills the aim to strive for technical excellence and short-term, egoistic financial gains but neglect to cultivate a spirit of care for moral justifications. Soft knowledge and skills are needed along with a sense to pursue altruistic consequences.

Need for New Anti-Risk Mechanisms

The *extant countermeasures* are being rendered impotent by the emerging complex and sophisticated applications, for example, the Internet and information superhighway, and by the ever lurking perpetrators who are always ready to crack any new countermeasures soon after they are developed and released (Lee, 2010). Specifically,

- The technical access control software such as firewalls, intrusion prevention systems, secure web and email gateways, and AVs (anti-virus software) can handle only the physical, tangible errors or risks but cannot handle the risks of a socio-technical nature;

- Computer law is useful as a reference framework for remedy and can be a forceful deterrent to prevent abusive acts by virtue of its power to punish. However, the law is by nature too slow to combat the rapidly developed acts of wrongdoings because creating a new law is complex and time-consuming and because people are in general reluctant to proceed with legal action or opt for legal action only as a last resort.

- Computer Audit is empowered to detect deviation from set policies of performance and to check and verify that compliance is properly enforced and that the results are consistent with the set standards – in physical, cost-benefit terms only. The audit-based mechanism is limited as a deterrent.

Anti-risk is becoming more difficult. Hence, new anti-risk mechanisms are called for in order to strengthen the weakened existing mechanisms.

Need of Ethical Standards

The central problem in Computer Ethics is to establishing ethical standards (Artz, 2005). It is a reasonable point. However, establishing ethical standards is difficult because ethics depends on culture, time, and many other factors; a universal ethics is next to impossible. Setting at least some basic minimum standards is not less difficult but reasonable, feasible, and worthwhile. Ethical Computing, as alluded to earlier, poises to serve this purpose.

COMPUTER ETHICS

Computer ethics has acquired different labels: Cyberethics (Lee, 2011), Sociotechnical Computer Ethics (Johnson, 2009), and information ethics (Freeman &

Peace, 2004), to name a few. "Computer ethics" is chosen for this article because the core issues involved are rooted in the computer no matter how sophisticated and complicated are the modern facilities such as the Internet, social media, and so on.

Like Ethics, Computer Ethics has many versions of definitions, of which the one often quoted is that

Computer ethics is the analysis of the nature and social impact of information and communication technology, and the corresponding formulation and justification of policies for the ethical use of such technology" *(Moor, 1985).*

In this article, Computer Ethics is taken to mean ethics in cyberspace concerned with the ethical consequences arising out of using the computer and its peripherals, particularly the Internet, and with the role played by the computer in cyber-threats. The majority of these undesirable acts are not possible without the computer, but as a result "the computer becomes the culprit (or an instrument) and the victim (or a target)" (Lee, 2014, p. 48).

It has been asserted that "people are the major source of risk and any decision to abuse or not to abuse depends entirely on a person's sense of morality" (Lee, 2014, p. 48), and that "people need something to awaken their sense of responsibility because information regarding computing risks and safe practices does little to significantly change behavior" (Aytes & Connolly, 2004). Since it is the human element in the system that raises ethical issues, not the computer, itself a neutral technology, the connection between Ethics and the computer is thus obvious, and *Computer Ethics* is arguably that "something."

To illustrate the connection between some of the common ethical principles and the actions taken, the *Octopus Saga* (2010) is selected for it is a Hong Kong case where personal data are sold for egoistic benefits:

The company sold the cardholders' personal data without prior consent of the owners. In defense, the CEO made a relativistic claim: "Since everybody does it, why can't I?" She relied on deontological grounds by claiming that selling the customers' personal data enabled her to fulfil the duty for making a profit as CEO and for securing her own job. She drew on con-

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