Ethics and Computing : A NEW PARADIGM

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COMPUTER ETHICS

- Computers : Ubiquous, logically malleable, universal tool.
- Ethical implications of their use becoming mainstream.
- This presentation will review some historical aspects of Computer Ethics and analyze in some detail diverse aspects of the interactions occurring in society between man and computers.
- The main questions of why Computer Ethics is needed, and if it will become a new paradigm for Ethics are approached.

C.E. : HISTORY

- First addressed during WWII when the concept of “Cybernetics” was developed (automatic self-control of machines). (Wiener).
- Wiener recognized a “Second Industrial Revolution” fundamented in the computer.
- Wiener theories were neglected for more than a decade, until the 60’s.

C.E. HISTORY (Cont.)

- 60's: Important social and ethical consequences of computer technology had already become manifest.
- First cybercrimes called attention of public.
- Government as "Big Brother".
- ELIZA software mimics human interactions successfully (1966). Ethical concerns.

C.E. HISTORY (Cont).

- 1976: Walter Maner coins the term "Computer Ethics" after realizing the influence of computers in medical decisions.
- Maner define it as **that branch of applied ethics which studies ethical problems "aggravated, transformed or created by computer technology ".**

C.E. HISTORY (Cont.)

- 1983: BYNUM launched an essay competition to generate interest in computer ethics and to create a special issue of the journal that he directs.
- James Moor's essay, "*What Is Computer Ethics?"* is the winner (published 1985).

C.E. HISTORY (Cont.)

- Moor's definition for C.E.:

"The analysis of the nature and social impact of computer technology and the corresponding formulation and justification of policies for the ethical use of such technology".

C.E. HISTORY (Cont.)

- 1985: Deborah Johnson publishes *Computer Ethics,* a reference book since then.
- Johnson identified 3 eras:
  - Mainframe based (privacy issues, big brother, no laws or policies)
  - Mini-micro (democratization, software issues)
  - Internet era... Just beginning

C.E. HISTORY (Cont.)

- Johnson:

"Computers pose new versions of standard moral problems and moral dilemmas, exacerbating the old problems, and forcing us to apply ordinary moral norms in uncharted realms"

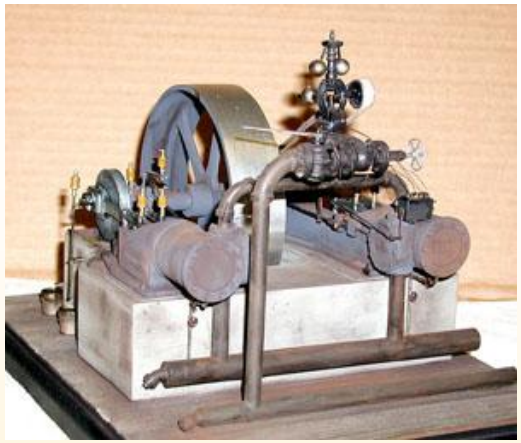
COMPUTER ETHICS

Moor :

- THE COMPUTER REVOLUTION
- Computers are Logically malleable.
- Universal tool
- New instrument of human action

COMPUTER REVOLUTION

- Analog (*Moor*) to the Industrial Revolution (S. XVIII and XIX) – Steam Engine



COMPUTER REVOLUTION

ANALOGY WITH INDUSTRIAL REVOLUTION

- **1st Stage**: Invention – Testing – Improvement – application to industrial processes.
- **2. Stage**: Permeation of the new technologies into every aspect of the society: currently occurring with computers.

COMPUTER REVOLUTION

INDUSTRIAL REVOLUTION:

- Human activities and institutions had to adapt to the new paradigm of industrial work.

COMPUTER REVOLUTION

- It is happening right now. In process.

INVISIBILITY FACTOR (Moor)

- Computer operations – good or bad – are not visible and can become unperceived.
- Programming values (criteria) not visible.
- (Fairness of results involving decisions based on programmed rules)
- Complex calculations: risk of wrong results.

COMPUTER ETHICS

- PRIVACY
- RISK
- SOCIAL-JUSTICE
- SPEECH
- COMMERCE
- INTELLECTUAL PROPERTY
- COMPUTER ABUSE

COMPUTER ETHICS

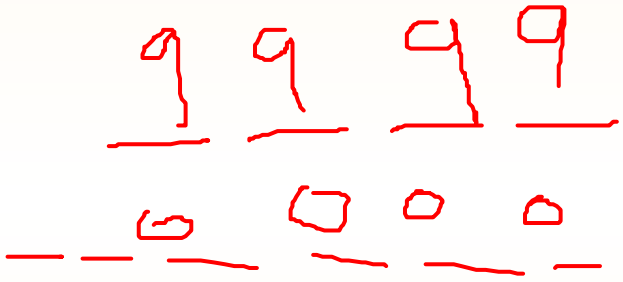
PRIVACY:

- Freedom from intrusion
- Right to be alone
- Right to control information about oneself.

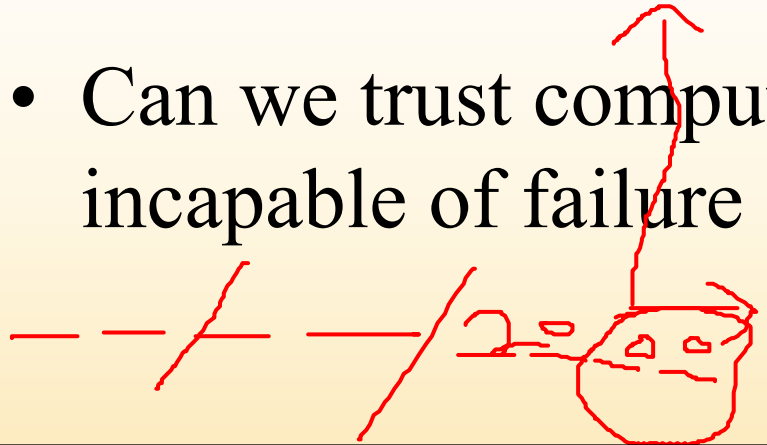
GPS – RFID – Biometrics – Digital Footprint

COMPUTER ETHICS

- Risk



- Can we trust computers ? Are they incapable of failure ?



COMPUTER ETHICS

RISKS

- Y2K Issue
- Votation machines... Who won ?
- Embedded logics in every machine and control (medical, transportation, energy, weapons...)
- Risks to the environment. **Green computing.**

COMPUTER ETHICS

SOCIAL – JUSTICE

THE DIGITAL DIVIDE

- Countries – Classes – Genders – Ages
- Remote working - Telecommuting → off-shoring.
- Migration issues (jobs, experts).
- Censure.

COMPUTER ETHICS

SPEECH

- Freedom of Speech → open publishing.
- Underground networks
- Objectionable material, uses. How to protect children from accessing it ?
- Netiquette – new rules.

COMPUTER ETHICS

COMMERCE

- E-commerce one of the driving forces of the Internet.
- New rules, new risks.
- Worldwide scope.
- Translate legislation (e.g. Gambling) difficult.

COMPUTER ETHICS

INTELLECTUAL PROPERTY

- Copyright – Patents – Trademarks – Trade secrets.
- MP3 – music piracy – P2P

PROPERTY OF INFORMATION

- Monopoly of software formats
- Internet – the research tool.

COMPUTER ETHICS

COMPUTER ABUSE

- Virus – Trojans – Spam – Phishing
- Cyber-bullying

CONCLUSION

Krystyna Górniak-Kocikowska, other of the main thinkers in the field, predicts:

Computer Ethics will evolve from being a branch of Ethics into a new Global Ethics applicable to every culture on Earth.

CONCLUSION

- The author of this paper personally agrees with Gorniak´s postulates. Computers and technology in general will be part of every person's life in the world, and the actions of that person will normally be performed with its aid. Few ethic dilemmas will be left aside that cannot be considered in this new frame.