Professional Practices

"Concepts, Methodologies and Codes of Cyber Ethics"

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What Is Cyber ethics?

- *Cyber ethics* is the study of moral, legal, and social issues involving cyber technology.
- It examines the impact that cyber technology has for our social, legal, and moral systems.
- It also evaluates the social policies and laws that have been framed in response to issues generated by the development and use of cyber technology.

What Is Cyber technology?

- *Cyber technology* refers to a wide range of computing and communications devices – from standalone computers, to "connected" or networked computing and communications technologies, to the Internet itself.
- Cyber technologies include: hand-held devices (such as iPhones), personal computers (desktops and laptops), mainframe computers, and so forth.

Cyber technology

- Networked devices can be connected directly to the Internet.
- They also can be connected to other devices through one or more privately owned computer networks.
- Privately owned networks include both *Local Area Networks (LANs)* and *Wide Area Networks (WANs)*.

Why the term cyber ethics?

- *Cyberethics* is a more accurate label than *computer ethics*, which might suggest the study of ethical issues limited to computing machines, or to computing professionals.
- It is more accurate than *Internet ethics*, which is limited only to ethical issues affecting computer networks.

Summary of Four Phases of Cyberethics

Phase	Time Period	Technological Features	Associated Issues
1	1950s-1960s	Stand-alone machines (large mainframe computers)	Artificial intelligence (AI), database privacy ("Big Brother")
2	1970s-1980s	Minicomputers and PCs interconnected via privately owned networks	Issues from Phase 1 plus concerns involving intellectual property and software piracy, computer crime, privacy and the exchange of records.
3	1990s-Present	Internet and World Wide Web	Issues from Phases 1 and 2 plus concerns about free speech, secrecy, legal jurisdiction, virtual communities, etc.
4	Present to Near Future	Convergence of information and communication technologies with nanotechnology research and genetic and genomic research, etc.	Issues from Phases 1-3 plus concerns about artificial electronic agents ("bots") with decision-making capabilities, bionic chip implants, nanocomputing research, etc.

Uniqueness Issue

- Is there anything new or unique about crimes that are favored by cyber technology?
- Two points of view:
- *Traditionalists* argue that nothing is new – crime is crime, and murder is murder.
- *Uniqueness Proponents* argue that cyber technology has introduced (at least some) new and unique ethical issues that could not have existed before computers.

Uniqueness Issue

- Both sides seem correct on some claims, and both seem to be wrong on others.
- Traditionalists underestimate the role of *scale* and *scope* that apply because of the impact of computer technology.
- Cyber stalkers can stalk multiple victims simultaneously (scale) and globally (because of the scope or reach of the Internet).
- They also can operate without ever having to leave the comfort of their homes.

Uniqueness Issue

- Uniqueness proponents tend to overstate the effect that cyber technology has on ethics.
- Maner (1996) argues that computers are uniquely fast, uniquely malleable, etc.
- There may indeed be some unique aspects of computer technology.

Uniqueness Issue

- But uniqueness proponents tend to confuse *unique features of technology* with *unique ethical issues*.
- They use the following logical fallacy:
  - *Cybertechnology has some unique technological features.*
  - *Cybertechnology generates ethical issues.*
  - *Therefore, the ethical issues generated by cybertechnology must be unique*.

Uniqueness Issue

- Traditionalists and uniqueness proponents are each partly correct.
- Traditionalists correctly point out that *no new ethical issues* have been introduced by computers.
- Uniqueness proponents are correct in that cybertechnology has complicated our analysis of traditional ethical issues.

Uniqueness Issue

- So we must distinguish between
  - unique technological features
  - unique ethical issues.
- Two scenarios from the text:
  - Computer professionals designing and coding a controversial computer system
  - Software piracy

Cyberethics as a Branch of Applied Ethics

- *Applied ethics*, unlike theoretical ethics, examines "practical" ethical issues.
- It analyzes moral issues from the vantage-point of one or more ethical theories.
- Ethicists working in fields of applied ethics are more interested in applying ethical theories to the analysis of specific moral problems than in debating the ethical theories themselves.

Cyberethics as a Branch of Applied Ethics

- Three distinct perspectives of applied ethics (as applied to cyberethics):
- Professional Ethics
- Philosophical Ethics
- Descriptive Ethics

Perspective # 1: Professional Ethics

- According to this view, cyberethics is the field that identifies and analyzes issues of ethical responsibility for computer professionals.
- Consider a computer professional's role in designing, developing, and maintaining computer hardware and software systems.
  - Suppose a programmer discovers that a software product she has been working on is about to be released for sale to the public, even though it is unreliable because it contains "buggy" software.
  - Should she "blow the whistle?"

Professional Ethics

- Don Gotterbarn (1991) argued that all genuine computer ethics issues are *professional ethics* issues.
- Computer ethics, for Gotterbarn is like medical ethics and legal ethics, which are tied to issues involving specific professions.
- He notes that computer ethics issues aren't about technology – e.g., we don't have automobile ethics, airplane ethics, etc.

Criticism of Professional Ethics Perspective

- Gotterbarn's model for computer ethics seems too narrow for cyberethics.
- Cyberethics issues affect not only computer professionals; they effect everyone.
- Before the widespread use of the Internet, Gotterbarn's professional-ethics model may have been adequate.

Perspective # 2: Philosophical Ethics

- From this perspective, cyberethics is a field of philosophical analysis and inquiry that goes beyond professional ethics (Gotterbarn).

- Moor (1985), defines computer ethics as:
  - *...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*.

Philosophical Ethics Perspective

- Moor argues that automobile and airplane technologies did not affect our social policies and norms in the same kinds of fundamental ways that computer technology has.
- Automobile and airplane technologies have revolutionized transportation, resulting in our ability to travel faster and farther than was possible in previous eras.
- But they did not have the same impact on our legal and moral systems as cybertechnology.

Philosophical Ethics: Standard Model of Applied Ethics

- Philip Brey (2000) describes the "standard methodology" used by philosophers in applied ethics research as having three stages:
- 1) Identify a particular controversial practice *as* a moral problem.
- 2) Describe and analyze the problem by clarifying concepts and examining the factual data associated with that problem.
- 3)Apply moral theories and principles to reach a position about the particular moral issue.

Perspective #3: Cyberethics as a Field of Descriptive Ethics

- The professional and philosophical perspectives both illustrate *normative* inquiries into applied ethics issues.
- Normative inquiries or studies are contrasted with *descriptive* studies.
- Descriptive investigations report about "what *is* the case“; normative inquiries evaluate situations from the vantage-point of the question: "what *ought to be* the case."

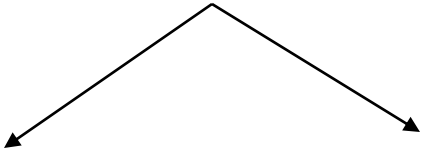
Descriptive Ethics Perspective

- *Scenario: A community's workforce and the introduction of a new technology.*
- Suppose a new technology displaces 8,000 workers in a community.
- If we analyze the issues solely in terms of the number of jobs that were gained or lost in that community, our investigation is essentially descriptive in nature.
- We are simply describing an impact that technology *X* has for Community *Y*.

Descriptive Ethics Perspective

- Descriptive vs. Normative Claims
- Consider three assertions:
  - (1) "Bill Gates served as the Chief Executive Officer of Microsoft Corporation for many years."
  - (2) "Bill Gates should expand Microsoft's product offerings."
  - (3) "Bill Gates should not engage in business practices that are unfair to competitors."
- Claims (2) And (3) are normative, (1) is descriptive; (2) is normative but non-moral, while (3) is both normative and moral.

Descriptive vs. Normative Claims

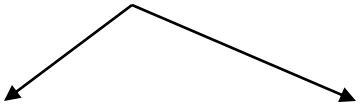


Descriptive

(Report or describe what *is* the case)

Normative

(Prescribe what *ought to be* the case)



Non-moral

Prescribe or evaluate in matters involving standards such as art and sports (e.g., criteria for a good painting or an outstanding athlete).

Moral

Prescribe or evaluate in matters having to do with fairness and Obligation (e.g., criteria for just and unjust actions and policies).

Two Broad Ethical Frameworks

- Teleological – rightness or wrongness of an action depends on whether the goal or desired end is achieved (look at the consequences – maybe OK to lie)
- Deontological – is an action right or wrong. Act out of obligation or duty. Prohibition against harming the innocent.

Two Broad Ethical Frameworks

- The good of the many—at core a teleological framework. An action is judged by how it affects the many. The point of reference is in the masses, not the individual.
- The good of the individual—at core a deontological framework. An action is judged by an internalized code of behavior, a moral system.

Three-step Strategy for Approaching Cyberethics Issues

Step 1. *Identify* a practice involving cyber-technology, or a feature in that technology, that is controversial from a moral perspective.

1a. Disclose any hidden (or opaque) features or issues that have moral implications

1b. If the issue is descriptive, assess the sociological implications for relevant social institutions and socio-demographic and populations.

1c. If there are no ethical/normative issues, then stop.

1d. If the ethical issue is professional in nature, assess it in terms of existing codes of conduct/ethics for relevant professional associations (see Chapter 4).

1e. If one or more ethical issues remain, then go to Step 2.

Step 2. *Analyze* the ethical issue by clarifying concepts and situating it in a context.

2a. If a policy vacuums exists, go to Step 2b; otherwise go to Step 3.

2b. Clear up any conceptual muddles involving the policy vacuum and go to Step 3.

Step 3. *Deliberate* on the ethical issue. The deliberation process requires two stages:

3a. Apply one or more ethical theories to the analysis of the moral issue, and then go to step 3b.

3b. Justify the position you reached by evaluating it against the rules for logic/critical thinking.