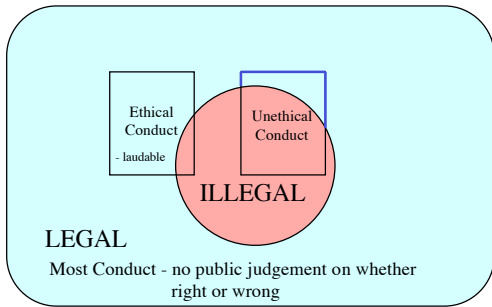# Ethical Issues in the Use and Development of Information Systems

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Ethical Conduct
- laudable

Unethical Conduct

ILLEGAL

LEGAL

Most Conduct - no public judgement on whether right or wrong

All Societal Conduct

Users of information are faced with ethical conflicts on a daily basis.

- use vehicle navigation data for purposes unknown to a driver for other than guiding the driver?

Developers of databases and technologies face similar conflicts.

- advance science or techniques that allow for stricter control over information systems (keep out thieves) or those that ensure continued open and equitable access to information systems and support ability to contribute

"**right**" versus "**wrong**"

"**right**" versus "**right**"

What course of action allows one to
"do the right thing"?

PHILOSOPHICAL PERSPECTIVES

Behavior - activities in which people engage

Conduct - a subset of behavior in which persons make voluntary choices between alternative courses of action

Social Science - generally, study of
behavior (how people act)

Science of Ethics - study of conduct
(how people ought to act)

Morals - refers to conduct (volitional
behavior) in practice

Ethics - theory of conduct

Ethics: the theoretical
examination of morals

1. **deontological** theories (concerning duty)
      - concerned with the rightness and wrongness
    of actions
          A. a single rule that would determine
              rightness or wrongness of actions?
          B. what makes an action right?
             • utilitarian theories
             • goodness of motive theories
             • morally appropriate theories

2. **teleological theories** (concerning ends)
          - concerned with the ends of actions and
             their goodness or badness

Shortcomings: no universal theory has
emerged

Positives: primary lines of ethical thought
have many areas of agreement
       • autonomy of the person
       • beneficence and nonmaleficence
       • rights of individuals
       • some aspects of paternalism

**Primary Critiques of GIS Applications
To Date**
  - primarily by moralists, rather than by ethicists

• maps more humanistic than GIS (Harley, 1990)
• don't lie with maps (Monmonier, 1991)
• oppose use of GIS in war (Smith, 1992)
• use GIS for stronger defense
• use GIS to increase access to marketplace goods
• oppose use of GIS for surveillance
• use GIS to protect the environment
• use GIS to protect interests of adult Caucasian males
         and traditional family structures

All of these are **moral** stances.

Science of ethics helps sort out which
moral arguments have greater validity.

Common language:
     - term "ethics" often substituted for
     "morals" (e.g. professional ethics)

Information System Design Scenario 1:
Moral Conflict?

In order to cash checks at large regional grocery store chains and discount store chains, customers must fill out an application that requests their name, address, phone number, and driver's license number. The application explicitly states that information about the applicant may be transferred to other parties if required by law or the management determines the transfer to be appropriate.

For the past year, all the major chain stores in a local region have been keeping track with their check-out scanners of the complete purchase histories of all of their customers who have purchased goods by check or credit card. In recent weeks, the businesses have come together to cross-match their files for their mutual benefit. In order to increase the value of the customer files for marketing purposes, the stores have already cross-matched each purchase history with the age, height and gender of each individual (acquired from their driver's license record filed with the state), the scanned photos of many of the customers (acquired from the photos required for receiving discount cards at some of the stores), and the social security numbers of almost all the customers (readily obtainable from other commercial databases.)

Your local engineering firm with considerable geographic information technology expertise is being asked to cross-match these files with additional information accessible through government public records. The intent of the consortium is to sell access to the resultant files to other parties throughout the nation who may have a business interest in them.

Specifically, your engineering firm is being asked to cross-matched the current customer profiles and addresses with taxing, assessment, and facilities records for each household, provided detailed cadastral information on the parcel (including the boundaries of each parcel and its current owner), and cross-matched the ZIP+4 designation for each household (along with the affiliated census data at the block level).

One Sample Guide:

**Nine Checkpoints for
Ethical Decision-Making**
(Rushworth Kidder, How Good People Make Tough Choices:
Resolving the Dilemmas of Ethical Living, pp.180-187)

1. Recognize that there *is* a moral issue.
- moral question vs. question of manners or
 social convention?
- does "conflict" involve not so much moral
 values as economic, technological or
 aesthetic values?
- apathy/cynicism toward issue? hyper-
 morality?

2. Determine the actor

- am I responsible?
- am I morally obligated and empowered to do
anything in the face of the moral issues raised?

3. Gather the relevant facts

4. Test for right-versus-wrong issues
• legal test
• stench test
• front-page test (blush test)
• mom test

- if proposed action fails any right-versus-wrong
 test, need go no further

5. Test for right-versus-right paradigms

Questions to help assess right-versus-right conflicts:

If forced to choose between **truth** and **loyalty** (all other considerations being equal), which would you choose?

       Truth (   ) Loyalty (   )

If forced to choose between the **individual** and the **community** (all other considerations being equal), which would you choose?

       Individual (   ) Community (   )

If forced to choose between the **short term** and the **long term** (all other considerations being equal), which would you choose?

       Short Term (   )   Long Term (   )

If forced to choose between **justice** and **mercy** (all other considerations being equal), which would you choose?

       Justice (   ) Mercy (   )

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6.   Apply the resolution principles

     a. ends-based (teleological)
     b. rule-based (deontological - Kantian)
     c. care-based (Golden rule)

     - which line(s) of reasoning most relevant and
          persuasive to the issue at hand?

     Alternative: pp 23-25 CyberEthics
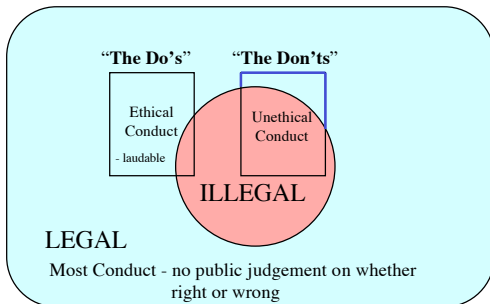
7. Investigate the "trilemma" options

8. Make the decision

9. Revisit and reflect on the decision

**Professional Code of Conduct
for GIS Practice?**

Personal Perspectives:

1. Is Code intended for GIS specialists or for
   tens of thousands of business users?

2. Less is typically more.

   • distill to essential points (paragraph or page)

   • page may actually be read and remembered

"**The Do's**"   "**The Don'ts**"

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Conduct
- laudable

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Most Conduct - no public judgement on whether
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3. Focus on laudable conduct (i.e. left side - The Do's)

4. For an individual, **moral issue consciousness** and knowledge of **processes for assessing contemplated actions** are more important than generalized disciplinary codes ….. although professional codes of conduct do have substantial value.

NAE President's Perspective on Engineering Ethics (2000)

In a speech presented at the NAE's just-concluded annual meeting, NAE President William A. Wulf looked back at the accomplishments of the 20th century and ahead to the challenges of the 21st century. Wulf suggested that in the next 5 to 15 years engineers will face challenges that seem to come out of the pages of science fiction rather than real life. *Because of the complexity of engineered systems in the fields of information technology, biotechnology, and nanotechnology*, it is becoming literally impossible to predict all properties and behaviors of such systems in advance. In addition, one or more of these systems will likely be present in every product manufactured by industry. *Engineers are faced with the prospect* -- fictive versions of which we have all seen on movie screens -- *of creating objects that can potentially threaten human society*. However, Dr. Wulf took a position contrary to at least one colleague mentioned in his speech, when he stated that *abandoning research in these areas is not the best ethical choice*. And he fundamentally resisted the proposition that there are truths that humans should not understand. Instead, Dr. Wulf encouraged engineers to address this challenge by creating a *macro-ethics for the profession, allowing issues to be addressed as a community* rather than by individual researchers.

To listen to Dr. Wulf's speech, visit http://video.nationalacademies.org/ramgen/news/102200.rm (requires RealPlayer, available at http://www.real.com/player/).

First Recommended Readings on Ethics for Engineers & Computer Scientists (books on reserve in Fogler Library)

Practical Primer:
Rushworth Kidder, How Good People Make Tough Choices: Resolving the Dilemmas of Ethical Living

Engineering Generally:
http://onlineethics.org/codes/codes.html
http://onlineethics.org/cases/index.html

Information Systems:
Cyberethics: Morality and Law in Cyberspace
Richard Spinello (2000) Jones and Bartlett Publishers; ISBN: 0763712698

Readings in Cyberethics
Richard Spinello and Herman T. Tavani (editors) (2001) Jones and Bartlett Publishers; ISBN: 067371500x