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## **Ch2: Moral Reasoning and Code of Ethics**

### **Contents**

- 1) Resolving Ethical Dilemmas
- 2) Making Moral Choices
- 3) Codes of Ethics

## Personal Ethics - everyday examples

- “Borrowing” nuts and bolts, office supplies from employer
- Copying of Videos or CD’s
- Plagiarism
- Using the copy machine at work
- Software piracy
- Expense account padding
- Copying of homework or tests

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## (1) Resolving Ethical Dilemma

- Reasonable Solution to Ethical Dilemma has to be *clear, informed, and well-reasoned*.
- Steps in Resolving Ethical Dilemma:
  1. Moral Clarity
  2. Conceptual Clarity
  3. Informed about the Facts
  4. Informed about the Options
  5. Well-Reasoned



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Case Study  
Chemical Engineer  
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A chemical engineer working in the environment division of a computer manufacturing firm learns that her company might be discharging unlawful amounts of lead and arsenic into the city sewer. The city process the slug into a fertilizer, the city impose restrictive laws on the discharge of lead and arsenic. Preliminary investigations convince the engineer that the company should implement stronger pollution controls, but her supervisor tell her the cost of doing so is prohibitive and the technically company is compliance with the law. She is also scheduled to appear before town officials to testify in the matter. What should she do?

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## Steps in Resolving Ethical Dilemmas



### **(1) Moral clarity:**

Identify the relevant moral values.

- The most basic step in confronting ethical dilemmas is to become aware of them! This means identifying the moral values and reasons applicable in the situation, and bearing them in mind as further investigations are made.
- These values and reasons might be obligations, rights, goods, ideals (which might be desirable but not mandatory), or other moral considerations.

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## Steps in Resolving Ethical Dilemmas



**(2) Conceptual clarity:**  
Be clear about key concepts.

- Professionalism requires being a faithful agent of one's employer, but does that mean doing what one's supervisor directs or doing what is good for the corporation in the long run? These might be different things, in particular when one's supervisor is adopting a short-term view that could harm the long-term interests of the corporation.

## Steps in Resolving Ethical Dilemmas



Again, what does it mean to "hold paramount the safety, health, and welfare of the public" in the case at hand? Does it pertain to all threats to public health, or just serious threats, and what is a "serious" threat? Again, does being "objective and truthful" simply mean never lying (intentionally stating a falsehood), or does it mean revealing all pertinent facts (withholding nothing important) and doing so in a way that gives no preference to the interests of one's employer over the needs of the public to be informed of hazards?

## Steps in Resolving Ethical Dilemmas



**(3) *Informed about the facts:***  
Obtain relevant information.

- This means gathering information that is pertinent in light of the applicable moral values . Sometimes the primary difficulty in resolving moral dilemmas is uncertainty about the facts, rather than conflicting values.

## Steps in Resolving Ethical Dilemmas



Certainly in the case at hand, the chemical engineer needs to check and recheck her findings, perhaps asking colleagues for their perspectives. Her corporation seems to be violating the law, but is it actually doing so? We, like the engineer, need to know more about the possible harm caused by the minute quantities of lead and arsenic over time. How serious is it, and how likely to cause harm?

## Steps in Resolving Ethical Dilemmas



### **(4) Informed about the options:**

Consider all (realistic) options.

- Initially, ethical dilemmas seem to force us into a two-way choice: Do this or do that. Either bow to a supervisor's orders or blow the whistle to the town authorities. A closer look often reveals additional options. (Sometimes writing down the main options and sub options as a matrix or decision tree ensures that all options are considered.)
- Unless an emergency develops, these and other steps should be attempted before informing authorities outside the corporation.

## Steps in Resolving Ethical Dilemmas



### **(5) Well-reasoned:**

Make a reasonable decision.

Arrive at a carefully reasoned judgment by weighing all the relevant moral reasons and facts. This is not a mechanical process that a computer or algorithm might do for us. Instead, it is a deliberation aimed at integrating all the relevant reasons, facts, and values-in a morally reasonable manner.

## Right-Wrong or Better-Worse?



We might divide ethical dilemmas into two broad categories.

- (A) Right or wrong dilemmas: "Right" means that one course of action is obligatory, and failing to do that action is unethical (immoral).
- (B) Some dilemmas have two or more reasonable solutions, no one of which is mandatory, but one of which should be chosen. These solutions might be better or worse than others in some respects but not necessarily in all respects.

## Steps in Resolving Ethical Dilemmas



In most instances (*Right or wrong dilemmas*) a code of ethics specifies what is clearly required:

Obey the law and heed engineering standards, do not offer or accept bribes, speak and write truthfully, maintain confidentiality, and so forth.

## (2) Making Moral Choices

- Moral dilemmas compromise the most difficult occasion for moral reasoning.
- Moral choices are decisions involving moral values.
- Two Cases to evaluate (Read @ Home):
  - Designing Aluminum Cans
  - Design Analogy: Caroline Whitbeck

## (3) Code of Ethics (NSPE)

- Every profession has its own Code of Ethics.
- Check Appendix B for Code of Ethics for:
  - NSPE
  - IEEE
  - AIChE
  - ASCE
  - ASME
  - ACM/IEEE/CS



### (3) Code of Ethics (NSPE)

- Fundamental Canons: Engineers, in the fulfillment of their professional duties, shall:
  1. Hold paramount the safety, health and welfare of the public in the performance of their professional duties.
  2. Perform services only in areas of their competence.
  3. Issue public statements only in an objective and truthful manner.
  4. Act in professional matters for each employer or client as faithful agents or trustees.
  5. Avoid deceptive acts in the solicitation of professional employment

### Codes of Ethics

Codes of ethics play at least **eight** essential roles

- Serving and protecting the public
- Providing guidance
- Offering inspiration
- Establishing shared standards
- Supporting responsible professionals
- Contributing to education
- Deterring wrongdoing
- Strengthening a profession's image



## Abuse of Codes

- Code are not taken seriously.
- Stifle Dissent of Code (Using code to cover unethical or immoral act)
- Restricting honest moral effort
- Restraining of commerce

## Limitation of Codes



- Vague warding (Unclear warding of code)
- Conflict between code entries
- Proliferation (close meaning to this is: multiple-conflict between different codes of ethics of different disciplines)
- Code can be flawed (Flawed=Imperfect)(respect literal meaning of words without changing to favor certain outcomes)

## Ethical Relativism

The view that actions are morally right within a particular society when, and only because, they are approved by law, customs, or other conventions of that society



## Ethical Relativism



### 1. Subjective Relativism (Subjectivism)

The view that actions are right or wrong relative to individual preference.

### 2. Cultural Relativism (Conventionalism)

The view that an action is right if one's culture approves it.

## Ethical Relativism



### 3. Emotivism

- The view of moral judgements cannot be either true or false, but are instead expressions of emotions or attitude
- Moral statements are used to express emotions and to try to influence other people's behaviour, but are not supportable by valid moral reasons.

### 4. Ethical Objectivism

States that some moral judgements are universal (valid for everyone).

## Ethical Relativism



### 5. Ethical Pragmatism

This approach of understanding code of ethics is based on recognize and record ethical obligations that are already practiced by the profession.

## Justification of Codes

How a code can be checked if it is good or not



- A. Clarity and coherent
- B. Systematic and comprehensive
- C. Compatible with moral conviction

## Conclusion

- *“Choice is reasonable when it... coordinates, organizes and functions each factor of the situation which gave rise to conflict, suspense and deliberation”.*

*John Dewey*

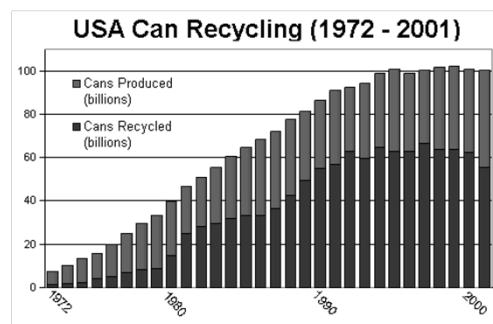
## Mini-Project (1)

### Genetic Engineering and Cloning:

You have been offered a full scholarship to study Genetics Engineering by ABC biological company and eventually you will be working for ABC biological company. The company works in multiple projects that involves cloning, stem research, and genetic engineered product. The company is involved in agricultural, medical and defense projects. Should the engineer accept the job offer.

- Discuss the above point. Make sure you list:
  - Ethical Dilemma
  - Relevant Facts
  - Involved Parties/factors
  - Relevant code of ethics
  - Moral frameworks (No need to include, Ch3)

## Case Study – Designing Aluminum Cans



## Case Study – Whitebeck

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### Homework (Read Chapter 2-text book)

- Review chapter 2 – Key concepts points