From the Great Philosophers to Professional Practice

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Presentation and exercise materials are posted at:
http://richardskeirik.com/ethics.html

"Moral philosophy must accept that there might not be an answer – not an objective one anyhow."

all quotes: G. C. Kerner

Lecture Objectives

At the end of the hour, you should be able to:

1. Briefly describe meta-ethics, normative ethics, and applied ethics

2. State the philosophies of Kantianism, Utilitarianism (Hedonistic and Pluralistic) , Humism, Existentialism, and Divine Command, each in one sentence

3. Explain why teleological ethics allow balancing needs while deontological ethics don't.

4. Explain why absolute requirements in ethical codes fail to provide workable guidance.

5. Apply a Pluralistic Utilitarian approach to select the most ethically correct option of several plant construction proposals.

6. Explain why active learning is superior to lecture alone.

Layers of Engineering Design

Meta-Physics

Physical laws; Gravity; Thermodynamics; composition of matter; nature of reactions, vapor liquid equilibrium

Normative Engineering

Rules that always apply: Material/Energy Balances; Heat/Mass Transfer rates; Pressure-Flow; Reactions rates

Applied Engineering

Engineering design – For any given Unit, apply normative relationships to determine size, shape, capacity for a specific situation

Chemical Engg	Mech Engg	Elec Engg	Civil Engg
Reactor Design			

Layers of Ethics

MetaEthics

Where does ethics come from?
What motivates us to be moral?

Normative Ethics

How can we codify, in a general way, what is right or wrong?

Applied Ethics

Applied Ethics – For any given domain, how can we apply normative codes to determine what is right or wrong for specific situations?

Business Ethics	Medical Ethics	Social Ethics			
Engineering Ethics	Assisted Suicide	Criminal Justice	Civil Rights	Gun Rights	Abortion

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MetaEthics

Where does ethics come from?

What motivates us to be moral?

Reason   Feeling   God

Happiness   Good
                             Faith

Normative Ethics

Where does ethics come from?
What motivates us to be moral?

Reason   Feeling   Good   God
Happiness   Faith

Normative Ethics

- General rules or approaches that identify right actions.
- Based on a particular meta-ethical basis

Normative Ethics

Where does ethics come from?
What motivates us to be moral?

Reason   Feeling   Good   God
                        Faith
Happiness

Normative Ethics

Ideally, normative ethics codifies right conduct with a single rule.

In reality, philosophers have exhausted their whole life trying to justify or prove correct a simply-expressed normative ethic – and always failed…

MetaEthics Active Learning

Where does ethics come from?

What motivates us to be moral?

Reason   **Feeling**   **Good Faith**   God

Happiness

Normative Ethics

- Pick one and write a single normative ethics rule:

 An action is right if: _____

- Is your rule universal? Societal? Individual?

Easiest

Hardest

Happiness

Feeling

Good Faith

Reason

"In determining what ultimately matters in life, it does not seem that any special training, education, or talent can make some of us superior to others."

Illustrative but non-moral example:

- Meta-ethical basis: Feeling

- Code:
An action is right if it makes you feel like dancing.
An individual rule.

"Traditionally at least, the moral philosopher tries to construct a unifying theory or system."

Why Active Learning?

- *Education* is part of the practice of Chem E
- Only ChemEs are competent to train ChemEs
- In industry, we often (constantly) need to educate others to build consensus
- Learners retain far more from active learning than from listening
- Learners are more interested and motivated when active

Get out your crayons!

Those of you on the right side of the aircraft will see Existentialism and Humism.

If you're seated on the left, you'll see Kantianism and Utilitarianism.

If you're looking up, you'll see Divine Command.

Kantian Ethics

Where does ethics come from? What motivates us to be moral?

Reason   Feeling   Good   God

Happiness   Faith

Immanuel
Kant
1724–1804

Categorical Imperative: An action is right if the reason for the action is universally valid – for any reasoning person.

Utilitarianism

Where does ethics come from? What motivates us to be moral?

Reason   Feeling   Good   God

Happiness   Faith

John Stuart
Mill
1806–73

An action is right if- of all possible choices – it creates the most happiness in the world.

Humism

Where does ethics come from? What motivates us to be moral?

Reason Feeling Good God

Happiness Faith

David
Hume
1711-1776

Right action is dictated by sentiment (feeling), and reason serves only to achieve that action.

Existentialism

Where does ethics come from? What motivates us to be moral?

Reason   Feeling   Good   God

Happiness   Faith

Jean-Paul
Sartre
1905–1980

An action is right for me when made in full, truthful awareness of myself and the circumstances.

Divine Command

Where does ethics come from? What motivates us to be moral?

Reason   Feeling   God
Good
Happiness   Faith

Moses
Allah
Jesus

Normative Ethics

Right action is dictated by commands handed down from God or a Prophet.

Basis vs. Outcome

- **Deontological Theories**: Honor Rules
  Ethical norms consider the *nature of the act* regardless of the consequence

- **Teleological Theories**: Honor Outcome
  Ethical norms consider the *consequence of the act* regardless of its nature

Pass out expressive exercise.

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Language cannot be mastered by reading and listening alone. The learner must activate brain centers by formulating statements and speaking those statements out loud.

Paul Pimsleur - Applied Linguistics Scholar

Synthetic Expression

Where does ethics come from? What motivates us to be moral?

? ? ? ? ?

Normative Ethics

? ? ? ? ?

? ?

Work Individually. Name each normative philosophy, state its metaethical basis, and express it in one sentence.
Is it deontological (rule) or teleological (consequence)?

"There is no alternative to being human and being concerned with the right way of living."

Suppose you have learned a new word. You tell yourself to remember it. However, after five minutes you're unable to recall it.

If you'd been reminded of it after five seconds, you probably would have remembered it for maybe a minute, at which time you would have needed another reminder. Each time you are reminded, you remember the word longer than you did the time before.

The intervals between reminders become longer and longer, until you eventually remember the word without being reminded at all.

from: The Pimsleur Guide

Applied Ethics

MetaEthics

Where does ethics come from?
What motivates us to be moral?

Normative Ethics

How can we codify, in a general way, what is right or wrong?

Applied Ethics

Applied Ethics – For any given domain, how can we apply normative codes to determine what is right or wrong for specific situations?

Business Ethics	Medical Ethics	Social Ethics			
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Engineering Ethics Active Learning 1

MetaEthics

Reason, Happiness, Feeling, Good Faith, God

Normative Ethics

Kantianism, Utilitarianism, Humism, Existentialism, Divine Command

Applied Ethics

A proposed plant will create 200 jobs in a depressed area, but the process will have to store a highly toxic vapor. Should we build it?
Test the five norms. Which of them offer a means of balancing worker/public safety against economic benefit to chose a "right" action? Which offer hope of building consensus?

Business Ethics	Medical Ethics	Social Ethics			
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Crib sheet on next slide.

Where does ethics come from? What motivates us to be moral?

Reason   Feeling   Good   God

Happiness   Faith

Kantianism: An action is right if the reason for the action is universally valid – for any reasoning person.

Utilitarianism: An action is right if- of all possible choices – it creates the most happiness in the world.

Humism: Right action is dictated by sentiment (feeling), and reason serves only to achieve that action.

Existentialism: An action is right for me when made in full, truthful awareness of myself and the circumstances.

Divine Command: Right action is dictated by commands handed down from God or a Prophet.

"In ethics we are concerned with the right way of living in the ultimate sense."

"Every moral choice confronts a person with considerations, motives, and norms which clamor for attention."

Balancing of Interests

- Only a *Teleological (consequential) Ethic* gives us hope of considering competing interests and striking a balance.

- In reality, most engineering decisions *of consequence* must balance interests.

- Absolute strictures fail to consider competing interests.

Engineering Ethics Active Learning: 2

MetaEthics

Reason, Happiness, Feeling, Good Faith, God

Normative Ethics

Kantianism, Utilitarianism, Humism, Existentialism, Divine Command

Engineering Ethics

Work through your state code, or the Institute code. Mark each stricture which is absolute. Is it deontological?

Which strictures give methods of choosing actions by balancing competing interests or values? Is it teleological?

Business Ethics	Medical Ethics	Social Ethics			
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"Just taking someone else's word for it relinquishes the responsibility for our own lives, in other words, our autonomy."

Some Absolutes

AIChE Code: Members shall:

   1. Hold paramount the safety, health and welfare….

   10. Never tolerate harrassment.

DAPE Code:

   1.A.The engineer shall at all times recognize that her/his paramount duty is to…

   3.A. The engineer shall be completely objective and truthful…

Pluralistic vs. Hedonistic Utilitarianism

Deontological theories can't balance competing interests, our codes don't help either, and Utilitarianism considers only happiness...

- *Hedonistic Utilitarianism* considers only the consequential happiness of an act.

- *Pluralistic Utilitarianism* considers other fundamentally valuable outcomes besides happiness.

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Where does ethics come from? What motivates us to be moral?

Reason   Happiness   Happiness, Health, Prosperity, Safety, etc.   Feeling   Good   God   Faith

Kantianism: An action is right if the reason for the action is universally valid – for any reasoning person.

Hedonistic Utilitarianism: An action is right if- of all possible choices – it creates the most happiness in the world.

Pluralistic Utilitarianism: An action is right if- of all possible choices – it creates the *greatest sum of virtuous states* in the world.

Humism: Right action is dictated by sentiment (feeling), and reason serves only to achieve that action.

Existentialism: An action is right for me when made in full, truthful awareness of myself and the circumstances.

Divine Command: Right action is dictated by commands handed down from God or a Prophet.

"In ethics we are concerned with the right way of living in the ultimate sense."

Ethics as Optimization

- In advanced control, we optimize using a weighted sum of consequential outputs: cost; quality, capacity, CO_2, environmental impact.

- In hazards analysis, we calculate probabilities of various outcomes.

- In practical terms, engineering ethics *also* requires that we optimize by 'weighting' consequences, including probabilities.

Pass out plant site/scale exercise

Engineering Ethics Active Learning: 3

MetaEthics

Reason, Happiness, Feeling, Good Faith, God

Normative Ethics

Kantianism, Utilitarianism, Humism, Existentialism, Divine Command

Engineering Ethics

You and your partner are retained to advise a rural town on whether/where/how big to build a proposed chemical plant.
The first table gives list of possible outcomes from such a plant. First, assign a number +/- for the Plural Utility (goodness) of each outcome.
The second table gives expected outcomes for several plant sites/sizes. Which do you find most ethically virtuous? How did you arrive at this?

Business Ethics	Medical Ethics	Social Ethics			
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We started out with Engineering;
We applied Ethics, and…

We ended up with Engineering.

Could anything be more ethical?

*"*Ethics belongs to everyone and, in that regard, no one can tell anyone anything.*"*

Lecture Objectives

By now, you should be able to:

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References

Are you interested in reading about ethics? ***Do not*** read the writings of the great philosophers. Their writing is universally obtuse, indirect, opaque and a travesty to the English language.

I recommend you read an undergraduate teaching book on ethics. Most any would work. I relied on this book, and I recommend it:

Philosophical Ethics by **Tom L Beauchamp**
You'll find pluralistic utilitarianism discussed on pages 113-116.

Another readable book focusing on just three philosophies is:

Three Philosophical Moralists; Mill, Kant, and Sartre by **George C. Kerner.**
The quotations littered though this presentation come from his introduction.