CIS 381: Social & Ethical Issues of Computing

Ethical Frameworks

Dr. David Koop
Society, Ethics, and Morality

• Society
  - Association of people organized under a system of rules
  - People may belong to more than one society

• Morality
  - From Latin *moralis* (custom)
  - Actions are moral if they are “good” or worthy of praise

• Ethics
  - From Greek ἡθος (custom)
  - The formal study of moral standards and conduct

• Goal: construct a general basis for deciding what is moral

[S. Abraham, 2018 (modified)]
Ethical Frameworks

• Systems guide ethical choices and provide a reason for that choice
• This is an unsolved problem!
• Approaches result in vastly different outcomes and behaviors
• Broad categories:
  - Relativism
  - Duty-based (non-consequentialist) framework:
    • Divine Command Theory
    • Kantianism
  - Consequentialist framework
    • Ethical egoism
  - Virtue framework
Divine Command Theory

- Start with the belief in a single God as creator of the universe and humans as part of creation (Judaism, Christianity, Islam)
- Morals based on the commands or character of God
- Use holy books as moral decision-making guides
- Sometimes augmented depending on level of fundamentalism
- Case for: obedience to all-knowing creator
- Case against:
  - Multi-cultural societies have different beliefs
  - Hard to reason if everyone doesn’t subscribe to initial beliefs
  - Some modern moral problems are not addressed in holy books
Ethical Egoism

• Each person should focus exclusively on his or her self-interest
• Morally right action: that action that provides self with maximum long-term benefit
• Case for:
  - We are inclined to do what’s best for ourselves
  - Communities can benefit if individuals prosper
• Case against:
  - Self-interest can lead to blatantly immoral behavior
  - Easy philosophy != best philosophy
  - Doesn’t respect the ethical point of view (doesn’t respect others)
Kantianism: Good Will

• Good will: desire to do the right thing
• Difference between what we want to do and what we ought to do
• Deontological: duty, not emotion or consequences
• Categorical Imperative: unconditional rule, regardless of circumstances
Categorical Imperative

- 1st Formulation: Act only from moral rules that you can at the same time will to be universal moral laws
- 2nd Formulation: Act so that you treat both yourself and other people as ends in themselves and never only as a means to an end
  - Don’t use others as a means to an end
- We can use these to determine duties: would the rule lead to an internal or external contradiction?
  - Perfect duty: duty obliged to fulfill without exception
  - Imperfect duty: duty obliged to fulfill in general but not in every instance
Kantianism

• Case for:
  - Treats all persons as moral equals as rational, autonomous beings
  - Holds everyone to the same standard

• Case against:
  - What if the rule isn’t clear? (stealing food to feed starving children)
  - What if rules are in conflict?
    • Generally, perfect duties trump imperfect ones
    • Issue with two perfect duties conflicting
Assignments

• Assignment 1 grades and feedback should be out soon

• Assignment 2 is due Friday
  - Patricia Churchland's views on how biology and neuroscience inform ethical study
  - Read either Churchland's paper or Shea's review
  - Skim the one you don't read
Utilitarianism

[Diagram showing a balance scale with 'GOOD' and 'BAD' on the top, weighing benefits and harms]

[M. J. Quinn]
Principle of Utility

• Jeremy Bentham and John Stuart Mill
• An action is **good** if its benefits exceeds its harms
• An action is **bad** if its harms exceed its benefits
• Utility: tendency of an object to produce happiness or prevent unhappiness for an individual or a community
• Happiness = advantage = benefit = good = pleasure
• Unhappiness = disadvantage = cost = evil = pain
Principle of Utility (Greatest Happiness Principle)

An **action** is right (or wrong) to the extent that it increases (or decreases) the total happiness of the affected parties.
Act Utilitarianism

- Utilitarianism
  - Morality of an action has nothing to do with intent
  - Focuses on the **consequences**
  - A consequentialist theory

- Act utilitarianism
  - Add up change in happiness (+/−) of **all affected beings**
  - Sum > 0, action is good
  - Sum < 0, action is bad
  - Right action to take: one that **maximizes** the sum

- What if one considers only oneself?
Bentham: Weighing Pleasure/Pain

- Intensity: magnitude of the experience
- Duration: how long the experience lasts
- Certainty: probability it will actually happen
- Propinquity: how close the experience is in space and time
- Fecundity: its ability to produce more experiences of the same kind
- Purity: extent to which pleasure is not diluted by pain or vice versa
- Extent: number of people affected

• But… what about being healthy or having knowledge?
• Seeking pleasure as the goal is hedonism
Example: Highway Routing Scenario

- State may replace a curvy stretch of highway with a new, straighter stretch of road
- New highway segment would be one mile shorter
- 150 houses would have to be removed
- Some wildlife habitat would be destroyed
Evaluation

• Costs
  - $20 million to compensate homeowners
  - $10 million to construct new highway
  - Lost wildlife habitat worth $1 million

• Benefits
  - $39 million savings in automobile driving costs

• Conclusion
  - $39 - 20 - 10 - 1 = +$8 million
  - Benefits exceed costs
  - Building highway a good action

[M. J. Quinn]
Case for Act Utilitarianism

- Focuses on happiness: fits intuition
- Down-to-earth (practical): we are familiar with cost-benefit analysis
- Comprehensive: can take into account all factors
Case Against Act Utilitarianism

- Unclear whom to include in calculations and how far out into the future to consider
  - Example: What if a doctor can save six lives by letting a patient die and using their organs?
- Too much work
- Ignores our innate sense of duty
- We cannot predict consequences with certainty
- Susceptible to the problem of moral luck
  - Consequences are not totally under the control of the agent
  - Example: sending flowers to hospital → allergic reaction
Workable
Rule Utilitarianism

- Apply the Principle of Utility to rules not individual actions
  - Act utilitarianism applies Principle of Utility to individual actions
  - Rule utilitarianism applies Principle of Utility to moral rules

- We ought to adopt moral rules which, if followed by everyone, will lead to the greatest increase in total happiness

- Similar to Kantianism in focusing on rules instead of actions
Anti-Worm Scenario

- August 2003: Blaster worm infected thousands of Windows computers
- Soon after, Nachi worm appeared
  - Took control of vulnerable computer
  - Located and destroyed copies of Blaster
  - Downloaded software patch to fix security problem
  - Used computer as launching pad to try to “infect” other vulnerable PCs
Evaluation using Rule Utilitarianism

• Proposed rule: If I can write a helpful worm that removes a harmful worm from infected computers and shields them from future attacks, I should do so

• Who would benefit
  - People who do not keep their systems updated

• Who would be harmed
  - People who use networks
  - People whose computers are invaded by buggy anti-worms
  - System administrators

• Conclusion: Harm outweighs benefits. Releasing anti-worm is wrong.
Case for Rule Utilitarianism

• Not every moral decision requires performing utilitarian calculus
• Moral rules survive exceptional situations
• Avoids the problem of moral luck
• Reduces the problem of bias
• Appeals to a wide cross-section of society
Case Against Utilitarianism in General

• All consequences must be measured on a single scale.
  - All units must be the same in order to do the sum
  - In certain circumstances utilitarians must quantify the value of a human life

• Utilitarianism ignores the problem of an unjust distribution of good consequences.
  - Utilitarianism does not mean “the greatest good of the greatest number”
  - That requires a principle of distributive justice
  - What happens when a conflict arises between the Principle of Utility and a principle of distributive justice?
Workable
Social Contract Theory

• Thomas Hobbes
  - In a “state of nature” our lives would be “solitary, poore, nasty, brutish, and short”
  - We *implicitly* accept a social contract
    • Establishment of moral rules to govern relations among citizens
    • Government capable of enforcing these rules

• Jean-Jacques Rousseau
  - In ideal society, no one above rules
  - That prevents society from enacting bad rules
Social Contract Theory

“Morality consists in the set of rules, governing how people are to treat one another, that rational people will agree to accept, for their mutual benefit, on the condition that others follow those rules as well.”

– J. Rachels
Kinds of Rights

• Negative right: A right that another can guarantee by leaving you alone (free expression)
• Positive right: A right obligating others to do something on your behalf (free K-12 education)
• Absolute right: A right guaranteed without exception (right to life)
• Limited right: A right that may be restricted based on the circumstances (free education limited to K-12)

• Positive rights tend to be more limited
• Negative rights tends to be more absolute
John Rawls’s Principles of Justice

• Each person may claim a “fully adequate” number of basic rights and liberties, so long as these claims are consistent with everyone else having a claim to the same rights and liberties

• Any social and economic inequalities must:
  - Be associated with positions that everyone has a fair and equal opportunity to achieve
  - Be to the greatest benefit of the least-advantaged members of society (the difference principle)
Rawls’s First Principle of Justice
Rawls’s Difference Principle: Progressive Tax

![Graph showing progressive tax paid based on personal income with two plans, Plan A and Plan B.](image-url)