



Why Computer Ethics?

- New issues accompany new technologies
 - New actions, new consequences
 - Old actions, new consequences
- “Common wisdom” not always adequate



Ethics

- Ethics: systematic, rational analysis of issues regarding performance of actions having both positive and negative impacts
- “Doing ethics”: answers with explanations
 - Explanations: facts, values, logic



Ethical Theories

- Methods for considering the morality of actions
- Methods for evaluating whether actions should or should not be done
- Methods for guiding the design of ethical actions
- Sources of values and logics for explanation



Ethical Theories

- Workable ethical theory
 - values and logic that can produce explanations that could be persuasive to a skeptical, yet open-minded audience



Ethical Theories

- Subjective relativism
- Cultural relativism
- Divine command theory

While these do provide values and logic, we will consider these not to be workable.



Ethical Theories

- Kantianism
- Act utilitarianism
- Rule utilitarianism
- Social contract theory

These we will consider workable.



Subjective Relativism

- Relativism
 - No universal norms of right and wrong
 - One person can say “X is right,” another can say “X is wrong,” and both can be right
- Subjective relativism
 - Each decides right and wrong for himself or herself
 - “What’s right for you may not be right for me”



Case for Subjective Relativism

- Well-meaning and intelligent people can disagree on moral issues
- Ethical debates are disagreeable and pointless as no one is convinced of other viewpoint



Case Against Subjective Relativism

- Blurs distinction between doing what you think is right and doing what you want to do
- Subjective Relativism and tolerance are not the same
- Decisions often not based on reason

Not a workable ethical theory



Cultural Relativism

- What is “right” and “wrong” depends upon a given culture’s moral guidelines or current practices
- These guidelines vary from place to place and from time to time
- A particular action may be right in one society at one time and wrong in other society or at another time



Case for Cultural Relativism

- Different social contexts demand different moral guidelines
- Behavioral data indicate significant cultural differences
- It is arrogant for one society to judge another
- Morality is reflected in actual behavior within a culture



Case Against Cultural Relativism

- Because two societies *do* have different moral views doesn't mean they *should* have different views
- Doesn't explain how moral guidelines are determined or evolve
- Provides no way for cultures in conflict to resolve issues
- Because *many* practices are acceptable, does not mean *any* cultural practice is acceptable (many/any fallacy)
- Societies do, in fact, share certain core values



Divine Command Theory

- Good actions: those aligned with God's will
- Bad actions: those contrary to God's will
- Holy books reveal God's will
- Use holy books as moral decision-making guides



Case for Divine Command Theory

- We owe obedience to our Creator
- God is all-good and all-knowing
- God is the ultimate authority
- Most religious rules are ethical



Case Against Divine Command Theory

- Holy books can disagree
- Interpretation of holy books can differ
- Society is multicultural, secular
- Not all moral problems addressed in scripture
- “good” ≠ “God” (equivalence fallacy)..
 - which came first
- Based on obedience, not reason



Kantianism

- Immanuel Kant
 - Only thing in the world that is good without qualification is good will ~~ “dutifulness”
 - what one ought to do is more important than what one wants to do
 - Reason should cultivate desire to do right thing.



Categorical Imperative (1st Formulation)

Act only from moral rules that you can
will to be universal moral laws.



Illustration of 1st Formulation

- Question: Can a person in dire straits make a promise with the intention of breaking it later?
- The person in trouble wants his promise to be believed so he can get what he needs.
- Universalize rule: Everyone may make and break promises if they need to do so.
- This rule would make promises unbelievable, contradicting the desire to have promise believed.
- Extenuating circumstances generally are not important.



Categorical Imperative (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.

This is often an easier formulation to work with than the first formulation of the Categorical Imperative.



Plagiarism Scenario

- Carla
 - Is a single mother, working full time
 - Takes two evening courses/semester
- Carla's History class
 - Requires more work than normal
 - Carla earning an "A" on all work so far
 - She doesn't have time to write final report
- Carla purchases report online, submits it as her own



Kantian Analysis 1st Version

- Carla wants credit for plagiarized report
- General Rule: “You may claim credit for work performed by others (when you don’t have time to do the work yourself).”
- Written reports would no longer be credible indicator’s of a student’s knowledge
- Proposed moral rule is self-defeating
- It is wrong for Carla to turn in a purchased report



Kantian Analysis 2nd Version

- Carla submitted another person's work
- She attempted to deceive her professor
- She treated professor as a means to an end
- Therefore, what Carla did was wrong
- Circumstances are irrelevant, intent determines judgement



Case Against Kantianism

- Sometimes no one rule adequately characterizes an action or situation.
- There is no way to resolve a conflict between rules
- Kantianism allows no exceptions to moral rules



Case for Kantianism

- Rational
- Based on universal moral guidelines..
duty to do good
- Treats all persons as moral equals



Utilitarianism

- Jeremy Bentham and John Stuart Mill
- An action is good if it benefits someone
- An action is bad if it harms someone

- Outcomes important ... not good will or intention



Utilitarianism

- Utility: tendency of an object to produce happiness or prevent unhappiness for an individual or community
- Happiness = advantage = benefit = good = pleasure
- Unhappiness = disadvantage = cost = harm = pain



Act Utilitarianism

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

affected parties -- stakeholders



Act Utilitarianism

- Utilitarianism
 - Morality of an action has nothing to do with intent
 - Focuses on the consequences, not intentions
- Act utilitarianism
 - Add up change in happiness of all affected beings
 - $\text{Sum} > 0$, action is good; $\text{Sum} < 0$, action is bad



Act Utilitarianism

- Methodology
 - identify stakeholders
 - identify impacts of act on stakeholders
 - evaluate overall impact by combining



Highway Routing Scenario

- State may replace a dangerous stretch of highway
- New highway segment less curves, 1 mile shorter
- 150 houses would have to be removed
- Some wildlife habitat would be destroyed



Highway Routing Scenario

- stakeholders
 - home owners along proposed route
 - drivers that use the route
 - state tax payers
 - wildlife, environment



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
 - saved lives and hospital costs
- Conclusion ???



Case Against Act Utilitarianism

- Unclear whom to include as stakeholders
- Unclear the valuation of certain impacts
- Too much work for all decisions
- Ignores our innate sense of duty
- Susceptible to the problem of moral luck



Bentham

Weighing Benefits/Costs

- Intensity, Duration, Certainty
- Propinquity, Fecundity, Purity, Extent

To enact climate change regulations



Case for Act Utilitarianism

- Focuses on happiness
- Down-to-earth (practical)
- Comprehensive

- Workable ethical theory



BLM WOPR

- Proposed Action
 - increase logging, including of ancient forests
 - increase roads in forests
 - reduce watershed and threatened species habitat protections



Rule Utilitarianism

- Adopt general, moral rules which, if followed by everyone, will lead to the greatest increase in total happiness
- Act utilitarianism applies utility analysis to individual actions
- Rule utilitarianism applies utility analysis to general situations



Anti-Worm Scenario

- August 2003: Blaster worm infected thousands of Windows computers, impeding their performance
- Soon after, the so-called Nachi worm appeared
 - Took control of vulnerable computers
 - Located and destroyed copies of Blaster
 - Downloaded patch to fix security problem
 - Used computer as launching pad to try to “infect” other vulnerable PCs with killer worm



Evaluation using Rule Utilitarianism

- Proposed rule: If one can write/launch a helpful worm that removes a harmful worm from infected computers and protects others from attack, one should do so.
- Who would benefit?
- Who would be harmed?
- What is balance?



Case for Rule Utilitarianism

- Compared to act utilitarianism, it is often easier to perform the utilitarian calculus.
- Moral rules survive exceptional situations
- Avoids much of the problem of moral luck

Workable ethical theory



Case Against Utilitarianism

- All consequences must be measured on a single scale.
- Utilitarianism ignores the problem of an unjust distribution of good consequences.
- Utilitarianism does **not** mean “the greatest good for the greatest (or neediest) number”
 - That requires a Principle of Justice
- What happens when a conflict arises between the Principle of Utility and a Principle of Justice?



Social Contract Theory

- Thomas Hobbes
 - We implicitly accept a social contract
 - Establishment of moral rules to govern relations among citizens
 - Government capable of enforcing these rules when enacted as laws



Social Contract Theory

- Jean-Jacques Rousseau
 - In an ideal society, no one is above the rules
 - That prevents society from enacting bad rules



Social Contract Theory

- Ethical analysis performed in terms of people's rights
- Society designated rights for its members
- Ethical actions are those that do not violate member rights... do no harm



Kinds of Rights

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



DVD Rental Scenario

- Bill owns chain of DVD rental stores
- Collects information about rentals from customers
- Constructs profiles of customers
- Sells profiles to direct marketing firms



Social Contract Analysis

- Consider rights of Bill, customers, and mail order companies.
- Does customer have right to expect name, address to be kept confidential?
- If customer rents DVD from Bill, who owns information about transaction? Ownership determines rights.



Social Contract Analysis

- If Bill and customer have equal rights to information, Bill did nothing wrong to sell information.
- If customers have right to expect name and address or transaction to be confidential without giving permission, then Bill was wrong to sell information without asking for permission.
- If customer gives limited right to information only for rental transaction, then Bill was wrong.



Case for Social Contract Theory

- Framed in language of rights
- Explains why people act in self-interest without common agreement... they have the right to so act
- Provides clear analysis of certain citizen/government problems
- Workable ethical theory



Case Against Social Contract Theory

- No signed contract, disagreement on rights
- Some actions have multiple characterizations
- Conflicting rights problem



John Rawls's Principles of Justice

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



John Rawls's Principles of Justice

- Any social and economic inequality 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*)



General Procedure for Ethical Analysis

- Step I: Clarification
 - clarify the facts
 - clarify stakeholders



General Procedure for Ethical Analysis

- Step 2: Identify the Question
 - understand ethical questions/issues
 - Should who do what?



General Procedure for Ethical Analysis

- Step 3: Preliminary Analysis
 - Mom test
 - TV test
 - Smell test
 - Golden Rule
 - Obvious legal consideration



General Procedure for Ethical Analysis

- Step 4: Theory-based Analysis
 - Kant
 - Utilitarianism (Act or Rule)
 - Social Contract



Kantian Analysis

- Universal Rule
 - look for self contradiction or defeat
- Person as end, not means
 - look for use of person, not respect



Utilitarian Analysis

- stakeholders
- weigh the consequences
 - of act or of general rule



Social Contract Analysis

- consider rights (positive and negative)
- look for violations or failures



Procedure for Ethical Analysis

- Step 5: Decision and Implementation
 - decide on an ethical course of action
 - implement that action



Scenario I

- Anti-Spam is dedicated to reducing spam.
- Urges an East-Asian country to stop spammers.
- When nothing done, puts country's ISP's on a blacklist.
- Many US ISP's use blacklist to filter emails, stopping most emails from that country.
- Spam drops 25% in US.



Scenario I

- Should Anti-Spam have posted the country on blacklist?
- Should the ISPs refuse to accept email from the blacklisted ISPs?
- Could Anti-Spam have achieved its goals through a better course of action?



Scenario 2

- East Dakota State Police installs web cameras connected to speed guns on all overpasses
- Software can read license plates and match drivers faces to owner images on license
- Automatically issue speeding tickets; speeding is greatly reduced on freeway
- FBI asks for access to videos and EDSP gives it to them; three months later FBI apprehends members of a terrorist group from evidence



Scenario 2

- Should the East Dakota State Police (EDSP) have put up the cameras?
- Should they have allowed the FBI access to videos?
- What other courses of action could the EDSP have taken to achieve its objectives?