

Economics, Law and Ethics
Part IB CST 75%, Part II CST 50%
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with many thanks to Ross Anderson

Overview

- Ethics:
 - Philosophies of ethics
 - Theory of moral reasoning
 - Professional codes of ethics
 - Responsible vulnerability disclosure
 - Ethics in research

Ethics

- In our field, laws are often ten years behind, and even then often don't fit reality very well
- Practical ethics: in what circumstances should we restrain our actions more than the law requires?
- Analogy: medical ethics (used to) require doctors to observe stricter confidentiality than either the law of confidence or data protection law required
- The philosophy of ethics asks “What are true moral values?” and “Why?”

Philosophies of ethics

- Authority theories mostly derive from religion. But God usually talks via scriptures or a priesthood; so how do you resolve disputes?
- Intuitionist theories say we can tell what's good and bad, like we can tell something is green. But again, our intuitions can differ, and how do you resolve disputes?
- Egoist theories say we act rationally in our own self-interest. We've seen the limits on that...

Philosophies of ethics (2)

- Consequentialism:
 - Whether an act is right or wrong depends only on the results of that act
 - The more good consequences an act produces, the better or more right that act
- Consequentialist theories include Hume, Bentham and Mill's utilitarianism: maximise $W = \sum U_i$ (or, 'greatest happiness of the greatest number')
- But how do you work out consequences in detail?
- Cheney's 'ticking bomb' justification for torture
- Modern debate: act vs rule utilitarianism

Philosophies of ethics (3)

- John Rawls ‘Theory of Justice’: we should make moral decisions about a society behind a “veil of ignorance” of whether we’ll be born high or low
- Deduces: we should maximise $W = \min U_i$
- Would you rather be reincarnated in the USA or (say) Portugal – poorer but with better welfare?
- Randomised algorithms, anyone?

Philosophies of ethics (4)

- Aristotle: consequentialist theories are ‘for beasts’: you’d be happier if you were stupid
- People should act in accordance with nature and duty: they will do good and be happy
- It’s not just the consequences of actions that make them right or wrong, but the motives of the actors
- The many flavours include Kantian theory of duty: act only on maxims that you’d like to be universal and treat people as ends not means

Moral reasoning

- Kohlberg's theory of moral development
 - Pre-conventional
 - Stage 1: Punishment and obedience
 - Stage 2: Instrumental hedonism
 - Conventional
 - Stage 3: Conformity
 - Stage 4: Authority and social order
 - Post-conventional
 - Stage 5: Morality of contract, individual rights and democratically accepted law
 - Stage 6: Morality of universal principles of conscience

The Heinz dilemma

A woman was on her deathbed. There was one drug that the doctors thought might save her. It was a form of radium that a druggist in the same town had recently discovered. The drug was expensive to make, but the druggist was charging ten times what the drug cost him to produce. He paid \$200 for the radium and charged \$2,000 for a small dose of the drug. The sick woman's husband, Heinz, went to everyone he knew to borrow the money, but he could only get together about \$1,000 which is half of what it cost. He told the druggist that his wife was dying and asked him to sell it cheaper or let him pay later. But the druggist said: "No, I discovered the drug and I'm going to make money from it." So Heinz got desperate and broke into the man's laboratory to steal the drug for his wife. Should Heinz have broken into the laboratory to steal the drug for his wife? Why or why not? (Kohlberg, 1981)

The Heinz dilemma

- Why might Heinz steal the drug?
 - Stage 1: if he wouldn't get punished
 - Stage 2: if the gains outweigh the risks
 - Stage 3: if it preserves social relationships
 - Stage 4: if it sustains society, or is approved of by important social institutions
 - Stage 5: if it supports social justice and protects basic human rights
 - Stage 6: if it conforms to universal moral principles

Professional codes of ethics

- ACM's code of ethics <https://ethics.acm.org/code-of-ethics/using-the-code/>
- A computing professional should...
 - Contribute to society and to human well-being, acknowledging that all people are stakeholders in computing
 - Avoid harm
 - Be honest and trustworthy
 - Be fair and take action not to discriminate
 - Respect the work required to produce new ideas, inventions, creative works, and computing artifacts
 - Respect privacy
 - Honour confidentiality

Responsible vulnerability disclosure

- If vulnerabilities found: range of responses from not disclosing to immediately making public
- Responsible disclosure: Confidential disclosure to those that can remedy or mitigate the impact
- Bug bounty programs

Ethics in research

- 1940s: Nazi human experiments
- 1930s-1970s: Tuskegee syphilis experiment
- 1970s: Stanford prison experiment
- 1960s: The Milgram experiment
- 2010s: Facebook emotional manipulation study

Ethics in research

- Research Ethics Boards:
 - Ethics Committees in UK, Institutional Review Boards (IRBs) in the US
- Research funding bodies
- Program committees and journal editors
- Professional Ethical Guidelines or Codes of Practice
- For computer science: The Menlo Report
 - Core principles: respect for persons, beneficence, justice, and respect for law and public interest.

Ethics in research

- Your Part II project may involve human experimental subjects
- Independent review by uninvolved scientists greatly reduces risks of both civil litigation, and criminal prosecution if things go wrong
- Pay attention to the procedures for ethics committee approval
- And if they say no, don't do it – unlike in the Cambridge Analytica case!