

CSC300: Ethics and Ethical Reasoning

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Sept 10, 2024

Course Management Stuff

- Everyone (almost) has been assigned a tutorial group
- The readings have already posted
- The ones who joined late or haven't yet got your tutorial, please check with **Lead TA, Rifat** to find your slot.
- The Office Hours will start next week. We will announce the slots later this week.
 - You can join Office Hours of the TAs with appointment
 - You will need an appointment for **HEAD TA** and Prof. Ahmed's Office Hours.
 - My office Hours: Thursdays 10-11 am
- This presentation has already been posted on Quercus
- The recording will be posted on Quercus soon.

Today: Ethical Reasoning and its Relevance to Computers and Society

- Important ethical frameworks
 - Virtue Ethics
 - Divine Command Theory
 - Kant's deontological ethics
 - Utilitarianism
 - Act Utilitarianism
 - Rule Utilitarianism
- Application in analyzing a computing system

Computers and Ethics... what are some connections?



Networks (especially social networks), have brought about a situation where we in the software industry may introduce profound changes in how people interact.



Discuss the binary ethical concepts of rational
This has enabled **good** things and **bad** things!



A host of petty crimes: phishing



Heinous crimes: Stalking children in chat rooms



“Clever” ideas like Facebook news feed manipulation



Now that “**innovation has been pushed to the edges**” you may have to make some hard choices...

Morals vs Ethics

- A **moral** is an instance of a system of ethics:

- Principles or habits with respect to right or wrong conduct. While morals also prescribe dos and don'ts, morality is ultimately a personal compass of right and wrong.

- **Ethics** is a philosophical system from which the morals of a society arise:

The rules of conduct recognized in respect to a particular class of human actions or a particular group or culture.

Video: <https://www.dictionary.com/e/video/morals-and-ethics-video/>

Read more: https://www.diffen.com/difference/Ethics_vs_Morals

Computers and Ethics... what are some connections?



Censoring search engine results is good because it protects children from bad things.



Censoring search engine results is bad because it impinges on freedom of information.



A society must find its own way to **balance**:

Rights like freedoms of expression, association, etc

Damaging side effects: smut, incitement to riot, etc.



Different groups of people will arrive at different compromises

Ethics and Ethical Reasoning: Core Issues and Questions

Richard William Paul and Linda Elder define ethics as **"a set of concepts and principles that guide us in determining what behavior helps or harms sentient creatures"**.

We will look at a few forms of ethics today...

Virtue Ethics:

- *What and who should I be?*
- character, excellence, productivity, meaning

Deontology:

- *What should I do?
...What rules should I follow?*
- duty, obligation (also disallowance, outlawing)

Utilitarianism:

- *What should I do?
...What rules should I follow?*
- right and wrong

Virtue ethics: Plato, Aristotle, and 'the Greeks'

Golden Mean

- The mean = the middle point
- Aristotle: virtue is *the balance between* two behavioral extremes
- Virtue is moderation – never excess, never too little
- See next slide...

Virtue is the ideal ... between excess and deficiency

	Excess (vice)	Mean (virtue)	Deficiency (vice)
Fear and confidence	Aggression	Courage	Cowardice
Honor and dishonor	Competitive level of ambition	Proper ambition	Unambitiousness
Getting and spending (minor)	Prodigality	Liberality	Illiberality
Anger	Short temper	Patience	Lack of concern
Expression	Boastfulness	Truthfulness	Understatement
Social conduct	Obsequiousness or flattery	Friendliness	Crankyness, grouchiness
Shame, self-consciousness	Shyness	Modesty	Shamelessness

Application example: the virtue of courage

- According to Aristotle, courage is a virtue that is the *mean* between aggression (excess) and cowardice (deficiency)
- According to virtue ethics, someone is courageous if they
 - Endures and fears the **right things**: doesn't have irrational fears (e.g. black cats)
 - Has fears for the **right reason**: isn't fearful because of superstition
 - Shows courage with the **right motive**: demonstrates courage for the good of others, not for selfish reasons
 - Shows courage in the **right manner**: doesn't make a big deal of themselves or draw attention
 - Shows courage and at the **right time**: knows how to 'pick their battles'

Failing to apply virtue ethics: example of kindness

- Not all “acts of kindness” are truly kind, according to virtue ethics...
- Failing to be kind:
 - Wrong **thing** – e.g. being kind towards a thief
 - Wrong **reason** – e.g. being kind out of guilt
 - Wrong **motive** – e.g. to gain advantage (e.g. giving a gift to gain favor)
 - Wrong **way** – e.g. your ‘kindness’ is not sensitive to the needs of person you are being kind to
 - Wrong **time** – e.g. being kind in order to distract from suffering you plan to inflict

Objection: can virtues conflict?

Example: your friend has broken the law. You know her whereabouts. The police knock on your door.

- What would a virtuous person do?
 - A loyal friend would misdirect the police... (loyalty is a virtue!)
 - A good civilian would lead the police to the friend... (truthfulness is a virtue!)

Objection to virtue ethics: it offers no way to determine action in cases of virtue conflict

- Enter utilitarianism and deontological ethics!
 - Both deal with how to make decisions (ethical *reasoning*)

Divine Command Theory ... a form of virtue ethics

- Morality: determined by God's commands
- To be moral: should act in a way commanded by God
 - Any problems here?
- Could be modified to be 'social' command theory: to be moral is to follow society's commands
 - Any problems here?

Divine Command Theory

“Good acts are those aligned with the will of God”

When groups of people come into conflict, each convinced that they are acting in alignment with the will of God, what then?

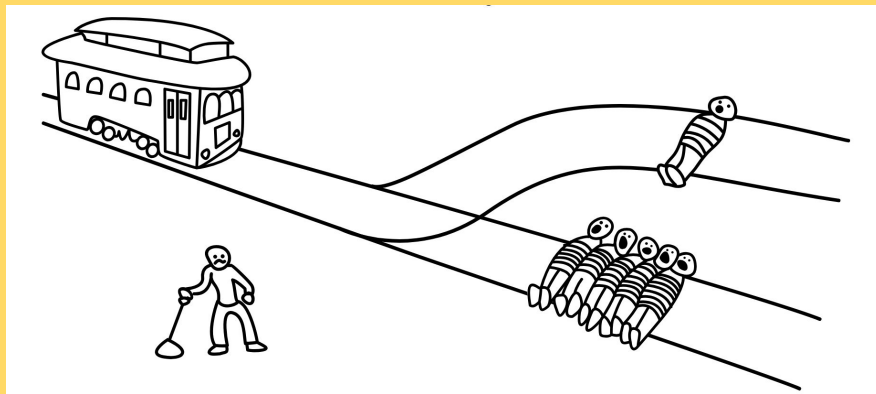
- Crusade? Terrorism? Resistance? Freedom Fighting?

Must reject as a framework for ethically evaluating scenarios in a pluralistic society.

- For personal affairs it's entirely up to the individual.

Problem (1): Trolley Problem

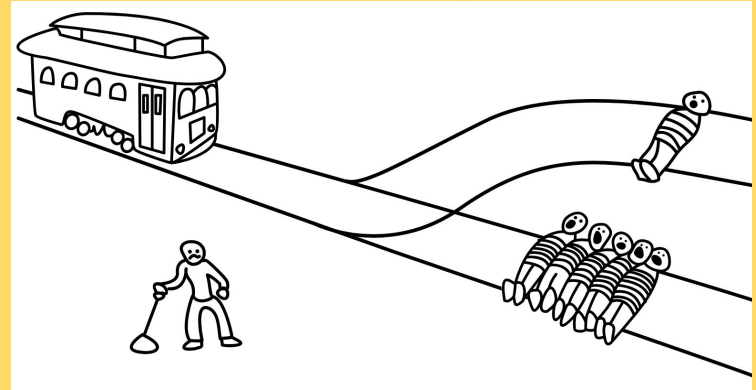
- You find yourself on a streetcar that has a malfunction and **can't** be stopped.
- Further down the line you notice there are **five** people that won't see the streetcar approach and you are sure would be killed if the streetcar continues in its set path.
- You notice a lever that can **change** the path of the streetcar. On the other track there is only **one** person that would also not see the streetcar and would die as a result.
- **Would you push the button?**
- **(answer by raising your hand)**



Discussion: Trolley Problem (10 mins)

Discuss:

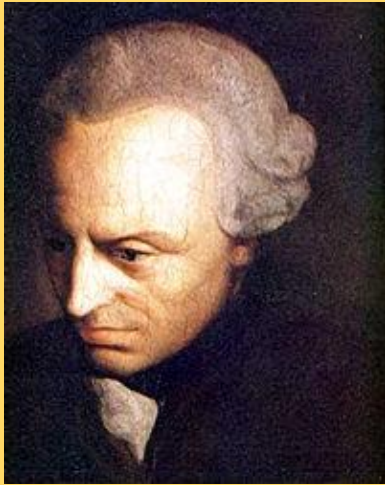
- What would be the virtuous thing to do for you?
- Would your decision be changed if the one person was
 - A researcher who might cure cancer
 - A criminal
 - A very old and/or sick person
 - A closed relative (parent, sibling) or a loved one
 - A person with mental illness ?
- Would your decision be changed if the streetcar would not kill them but cause serious injury
 - they would survive but would be physically disabled?



For more trolley problems: <https://neal.fun/absurd-trolley-problems/>

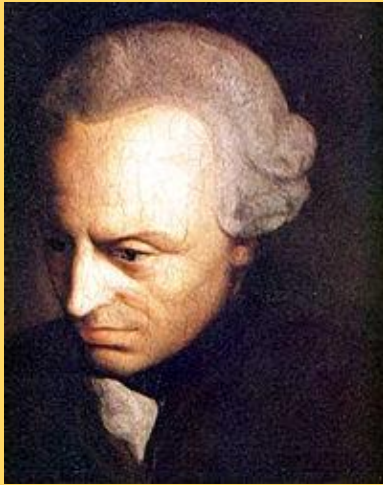
Deontological ethics:

Immanuel Kant



Immanuel Kant (1724-1804)

- Influential German philosopher
- *Metaphysics of Moral* – his most famous ethical work



Duties

- Kant's deontological ethics is concerned with duties to do something (obligations) and duties not to do something (prohibitions)
- From Greek "deon": obligation, duty

Kant's "categorical imperative"

- “so if the will is to be called absolutely good without qualification; what kind of law can this be? Since I have robbed the will of any impulses that could come to it from obeying any law, nothing remains to serve as a guiding principle of the will except conduct’s universally conforming to law as such. That is, **I ought never to act in such a way that I couldn’t also will that the maxim on which I act should be a universal law.**”

Categorical imperative

- Act as if the maxim* of your action were to become through your will a universal law of nature.
- Never treat others as tools. People are 'ends in themselves.'
- Action should be concerned with making **universal laws** which enable the 'kingdom of ends' (a society/state where everyone acts on these laws).

Maxim: principle you set out for yourself

“Act as if the maxim of your action were to become through your will a universal law of nature”

“Can I will that my maxim be a universal law of nature?”

- ...all things considered, do I really desire my maxim to become a universal law of nature (an action that everyone follows in this situation)?
- ...Could I, in *every* situation, accept this maxim as law?

To imagine the maxim of a proposed action as a *universal law of nature* means imagining that everyone in the situation you are in does the act you follow

If the outcome of everyone in your situation doing what you do is GOOD, then you have acted ethically according to deontological principles of ethical reasoning.

Duties

Duties can be subjective or objective.

- Subjective (maxims): based on principle you make for yourself and act on
- Objective (imperatives): based on principles which you ought to be following i.e. the principles an ethical person would follow

Perfect and imperfect duties

Duties can be “perfect” or “imperfect”

- **Perfect duty:** one must always do it or one always has a duty NOT to do it
 - *See next slide!*
- **Imperfect duty:** one should not ignore it, but recognizes there are multiple ways to fulfill.
 - **Kant** says there are two types of imperfect duties:
 - the **duty** of self-improvement
 - the **duty** to aid others.
 - Both types of imperfect duties are conceivable and acceptable as a universal law

Case: Deceitful promise

Do we have a duty not to make a major a deceitful promise *to pretend we plan to pay back a loan?*

- **Maxim** (principle you act on) in this case: I want to borrow money and pretend that I plan to pay it back [because I don't want to pay it back]
- **The maxim if it were to become generalized:** everyone acts on the maxim that they may freely borrow money without intention to pay the money back

Testing this maxim: Could the generalized maxim become a universal?

- Kant says no: Impossible for this to be a generalized maxim
 - Promises simply would not exist if no one fulfilled their promises.
- Therefore, the maxim is not conceivable as universal law.
- This is where **perfect** duties come in: we have a **perfect** duty **not** to make deceitful promises
 - *See next slide!*

	Perfect Duties <i>One always has a duty to do it, or one always has a duty to NEVER do it</i>	Imperfect Duties <i>Many ways to do it, but must never ignore it</i>
To self	Never commit suicide	Develop some of one's talents <i>"duty of self improvement"</i>
To others/society	Never make deceitful promise	To help some others in distress <i>"duty to aid others"</i>

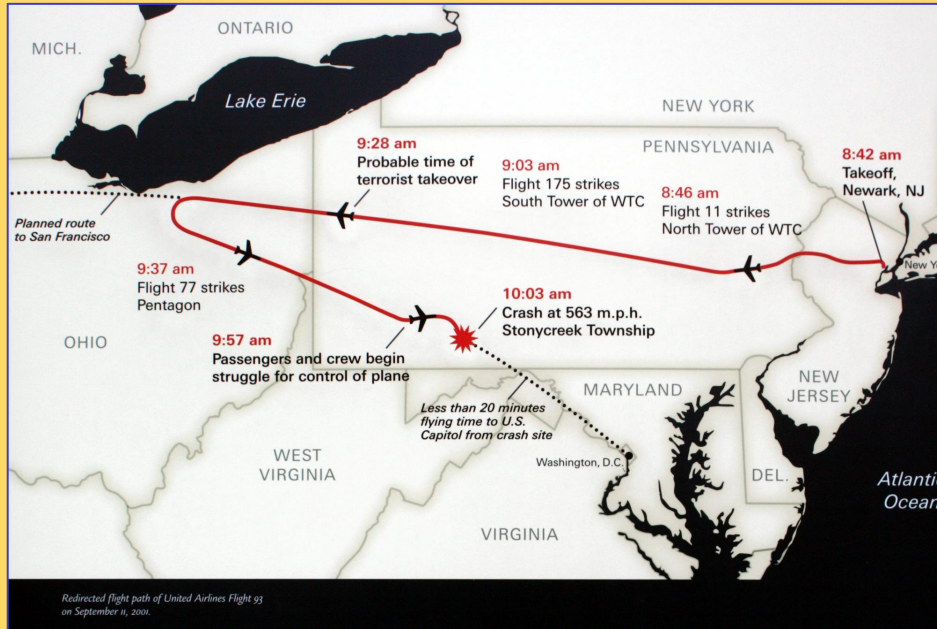
What about the *consequences* of our actions?

- Deontological ethics shows us how to act, by centering our “duties”
- Utilitarianism, on the other hand, is more directly motivated by consequences

Does not taking action is always ethical then?

- No action, no sin?

Is not taking an action always an ethical choice?

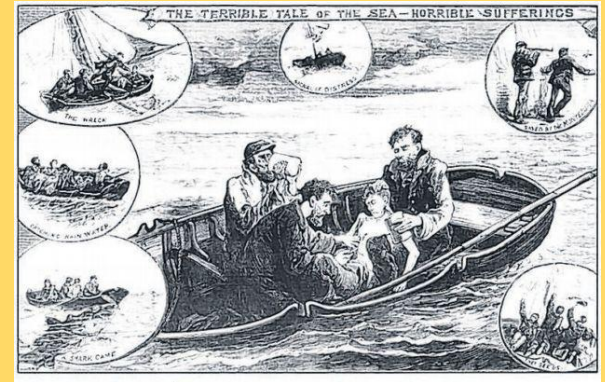


United Airlines flight 93 route
before crashing

- UA Flight 93 was a scheduled passenger flight that was hijacked by four Al-Qaeda terrorists on board, as part of the September 11 attacks.
 - It crashed into a field in Somerset County, PA, during an attempt by the passengers and crew to regain control. **All 44 people aboard were killed, including the four hijackers**, but no one on the ground was injured.
 - The event popularized the call to action “let’s roll”.
- Would you have voted to attack?

Regina v. Dudley and Stephens (1884)

- Dudley and Stephens along with Brooks and Parker(victim) were castaway at sea without weeks of food and water except for some turnips and a turtle.
- After twenty days, Dudley and Stephens proposed one person sacrifice himself in order to save the rest. Brooks dissented while Dudley and Stephens decided to kill Parker since he was the weakest and youngest.
- On the 25th of July, seeing no rescue in sight, the two men killed Parker and the three men feasted on his body.
- Four days later a vessel rescued them and Dudley and Stephens were charged with murder.



Discussion: Regina v. Dudley and Stephens (5 mins)

Discuss:

- Was it ethical for D&S to kill Parker?
- Would it be ethical if they rolled a dice instead and kill the person that showed up in the lottery?
- What if Parker was an orphan and nobody would be devastated by his death?
- What if Parker was sick and was going to die soon anyway?
- Would this decision be the same if Parker was a child of either of Dudley and Stephens?



Utilitarianism:

*J. Bentham and
JS Mill*

Bentham's "hedonic calculus"



1748 - 1832

Hedonism: the pursuit of pleasure

Calculus: measured system (for mathematics and also for reasoning)

Applying to hedonic calculus to determine if an action is "ethical"

For each option....

- Add up the pleasure of all involved.
- Subtract the pains for each alternative actions
- Pick the one that promotes the most pleasure

The ethical principle of utility

- An action is ethical if **it brings about more happiness for everyone affected than any identifiable alternative.**
- What is happiness?
 - pleasure
 - the absence of pain.
- Ethical Action can be determined by calculating impact on human pleasure and pain.
- “Actions” can be formalized into obligations and prohibitions (similar to Kant’s *duties*)
- Examples of applied utilitarian ethics:
 - The **obligation** to help someone who has slipped and fallen
 - The **prohibition** to kill an innocent person

Two Types of Utilitarianism: #1: Bentham's act utilitarianism

An Action is right if and only if it produces the greatest balance of pleasure over pain for the greatest number.

In Act Utilitarianism:

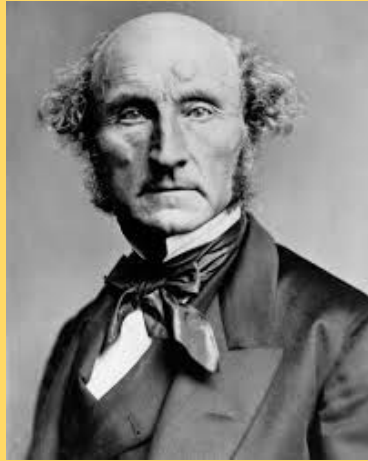
- Look at consequences of act.
- Calculate "utility" not just for the act happening once, but with consideration to the fact that the act may be performed many times.

Is act utilitarianism practical...?

- **YES:** act utilitarians can follow rules-of-thumb (accumulated wisdom based on consequences in the past) most of the time and engage in individual calculation only when there is some pressing reason for doing so.
- **NO:** we don't have time to calculate at each point in time what the pleasure/pain consequences will be

So, it looks like it is practically impossible to be a good person

John Stuart Mill's objection to Bentham's Utilitarianism



1806-1873

Pleasures differ in quality as well as quantity!

Famous quote:

- “It is better to be a human being dissatisfied than a pig satisfied; Better to be Socrates dissatisfied than a fool satisfied; And if the fool or the pig think otherwise, that is because they know only their own side of the question. The other party to the comparison knows both sides.”

(Utilitarianism, 1861)

Two Types of Utilitarianism:

#2: Mill's rule utilitarianism

From earlier slide...

- **Act utilitarianism**: An Action is right if and only if it produces the greatest balance of pleasure over pain for the greatest number.
(Jeremy Bentham)

- **Rule utilitarianism**: An action is right if and only if it conforms to a set of rules the general acceptance of which would produce the greatest balance of pleasure over pain for the greatest number. (John Stuart Mill)

Rule utilitarianism (JS Mill)

Following rules that maximize overall benefit, so you don't need to decide what to do in every situation.

For example:

- Never commit adultery (harm to marriage outweighs benefits)
- Donate 5% of your income to charity (benefit to society outweighs cost to you)
- Never eat meat (benefit to other living beings outweighs cost to you)

Mill stated: “*The happiness that forms the utilitarian standard of what is right in conduct is not the agent’s own happiness, but that of all concerned. Utilitarianism requires impartiality, like that of a disinterested benevolent spectator.*”

(Utilitarianism, 1861)

How would you apply Act and Rule Utilitarianism ?

- A political leader, critically injured by an assassin's bullet, needs an immediate heart and lung transplant to survive.
- No suitable donors are available, but another patient in the ER, on a respirator, has only a few days to live and is a perfect match.
- Without the transplant, the leader will die; the other patient will die soon regardless.
- The transplant team could hasten the patient's death and perform the transplant secretly.



What should the transplant team do?

For rule utilitarians, this is an easy choice: **NO**.

- No one could approve a **general rule** that lets hospitals kill patients for their organs.
- The consequences of adopting this as a general rule would destroy public trust in the hospital and medical professionals.
- High cost, low benefit.

For act utilitarians, the choice is more **complex**.

- If secrecy was guaranteed, the overall consequences means greater utility by speeding the death and using the organs for transplant.
- But less utility if this becomes public and a scandal breaks out.

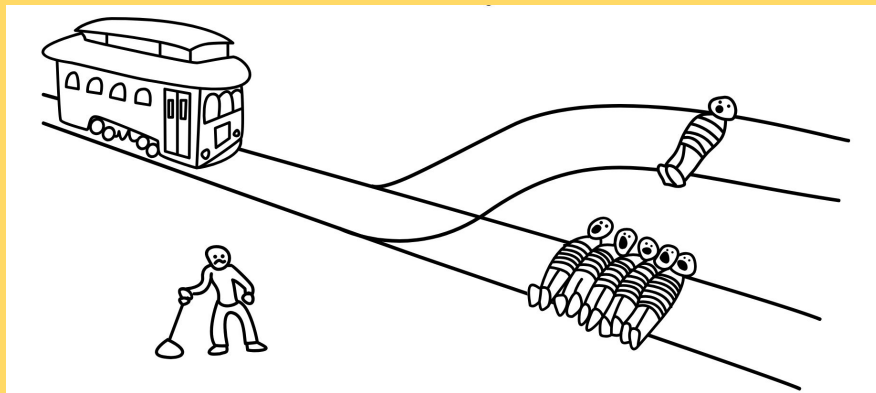
TAKEAWAY: Even when optimizing for consequences, ethical reasoning is never 'perfect'.

That is why there are multiple forms of ethics, and will continue to be new forms...

Reflect back: Trolley Problem

- You find yourself on a streetcar that has a malfunction and **can't** be stopped.
- Further down the line you notice there are **five** people that won't see the streetcar approach and you are sure would be killed if the streetcar continues in its set path.
- You notice a lever that can **change** the path of the streetcar. On the other track there is only **one** person that would also not see the streetcar and would die as a result.

Do you pull the lever ?



The Ford Pinto Case

- In May 1968, the Ford Motor Company, led by VP Lee Iacocca, decided to introduce a domestically produced subcompact car.
- To capture market share quickly, the Pinto was designed and developed on an accelerated schedule.
- Initial sales were excellent, but problems soon emerged.



The Ford Pinto Case

- In May 1972, Lily Gray and 13-year-old Richard Grimshaw were in a 1972 Pinto when it was hit by another car at around 30 mph.
- The collision caused a fire, killing Gray and severely injuring Grimshaw.
- A jury awarded the Gray family \$560,000 and Grimshaw \$2.5 million in compensatory damages, along with \$125 million in punitive damages, later reduced to \$3.5 million.



The Ford Pinto Case

- Ford had access to a new design that would reduce the risk of exploding but it was more expensive (cost \$11 more per car).
- Their analysis showed this design could prevent 180 deaths.
 - \$137 million more for new design
 - \$49.5 million estimated cost of deaths, injuries, and damages.
- Thus, Ford felt justified in not switching to new design based on risk/benefit analysis.



Challenges ...

Discussion: You are now a doctor...

- You are now a doctor, suddenly six workers involved in a streetcar accident arrive to the emergency room.
- One of the patients is very seriously injured, perhaps fatally, and working to save him would mean neglecting the other patients (and their **certain** death).
- On the other hand, attending the five critically injured patients would mean sacrificing the one severely injured (and his **certain** death).
- **Would you save the severely injured patient?**
- **(answer by raising your hand)**

Discussion: You are now a doctor...

- You are still a doctor, same six workers involved in a streetcar accident arrive to the emergency room.
- Five of the workers are **severely injured** and each would need a different organ transplant to survive (liver, kidney, heart...).
- On the other room, the worker driving the streetcar miraculously survived with **nothing but a scratch** and is taking a nap.
- You are the only one that knows about the unscratched worker's condition and are **certain** you wouldn't be caught if you sedate him and get the organs from him to save the severely injured workers.

Would you save the severely injured patients?

(answer by raising your hand)

- Which moral values deserve to be moral rights?

Societies are diverse

- More than one ethical framework is usually at play in any society. For example,
 - Religious beliefs of different communities
 - Regulations
 - Ethics committees in human-oriented research and hospitals
- Socrates et al lived in small pockets of relatively isolated civilization surrounded by “savages”, but we live in a highly connected world. Everyday we watch people making different moral judgements:
 - A big differentiating factor is the influence of “Divine Inspiration”
 - Another is “utilitarianism”
- Some religious societies base their morals on holy writings much more than other secular societies, but most are a compromise.

How do we negotiate differences in our ethics?

- Less of a problem in pre-modern, more homogenous societies.
- A serious question in pluralistic societies (like Canada).
- One way would be to shift away from a universal ethical framework

Rationality

vs

Relationality

- Dominant view in Western thought and epistemology, assuming a universal standpoint.
- Privileges reason and logical coherence for knowledge and decision-making.
- Seeks certainty, stability, and order through isolation, separation, and clear binaries.

- Emphasizes subjective standpoints and the primacy of relationships.
- Privileges context, relationships between people, and lived experiences.
- Includes approaches like Feminist Care Ethics, Black feminist (Afro-feminist) epistemologies, and ubuntu (sub-Saharan African philosophy).

Relationality vs Rationality

NEWS FEATURE | 19 March 2024

AI image generators often give racist and sexist results: can they be fixed?

Researchers are tracing sources of racial and gender bias in images generated by artificial intelligence, and making efforts to fix them.

[Source](#)

Rational Approach:

- Assume there is objective representation that is unbiased
- Fix the dataset, algorithm, or metric to correct the bias
- If the bias cannot be fixed, do not use the algorithm

Relational Approach

- Shift focus from bias to impact
- Who is being harmed by the bias? Who is being benefitted?
- Ethical approach towards using or not using the algorithm depends on the context.

Relational Epistemologies

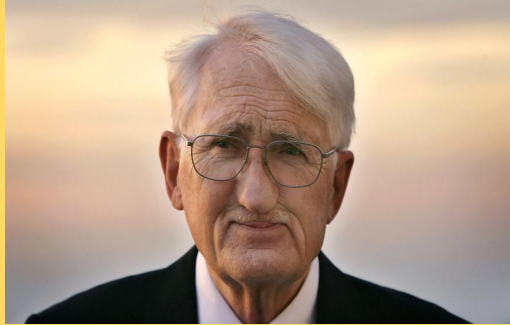
- **Feminist Care Ethics:**
 - Recognizes that relationships of care, such as parents caring for young children, cannot be captured by traditional European ethical theories.
- **Afro-Feminist Epistemology:**
 - Asserts that people are not passive observers but gain knowledge and understanding through concrete lived experiences, not abstract contemplation.

Ethics based on Relationality

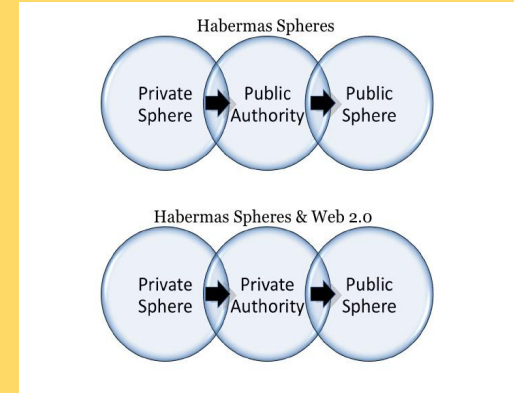
Rethinking of justice and ethics as a set of broad, contingent, and fluid concepts that need to be grounded in lived experiences, relationships, and context.

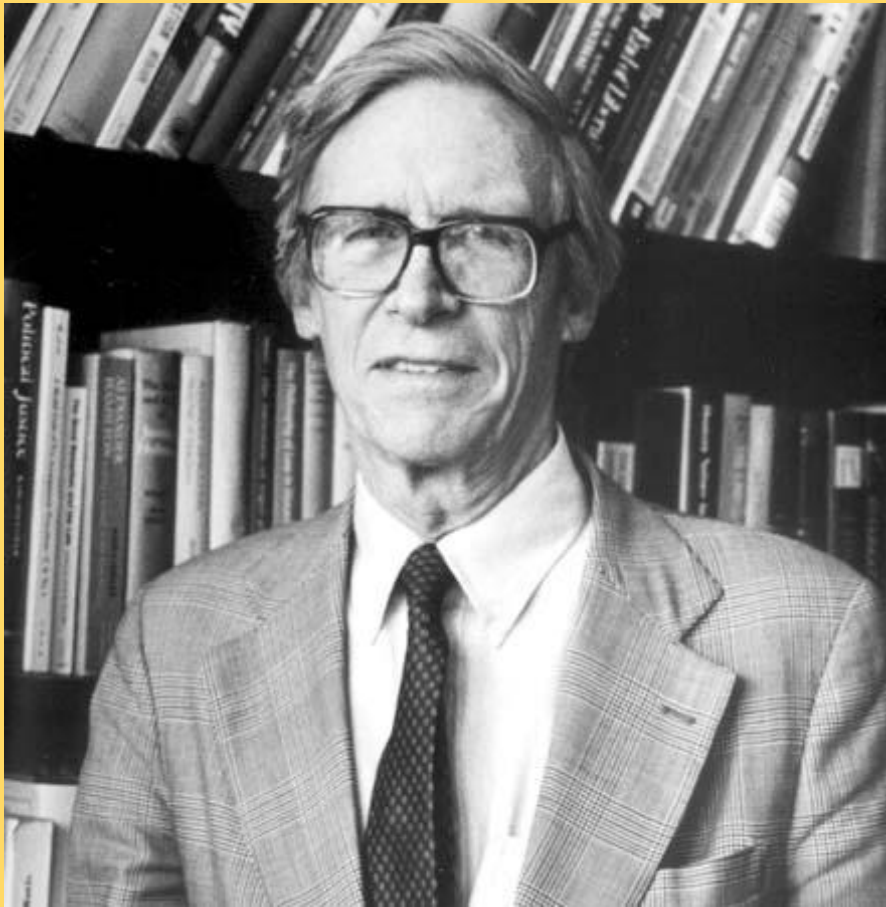
- **Knowing that centers human relations**
- **Bias is not a deviation from the “correct” description**
- **Prioritizing of understanding over prediction**
- **Centering the disproportionately impacted**
- **[Computer science] as a practice that alters the social fabric**

Public and Private Spheres



Jürgen
Habermas

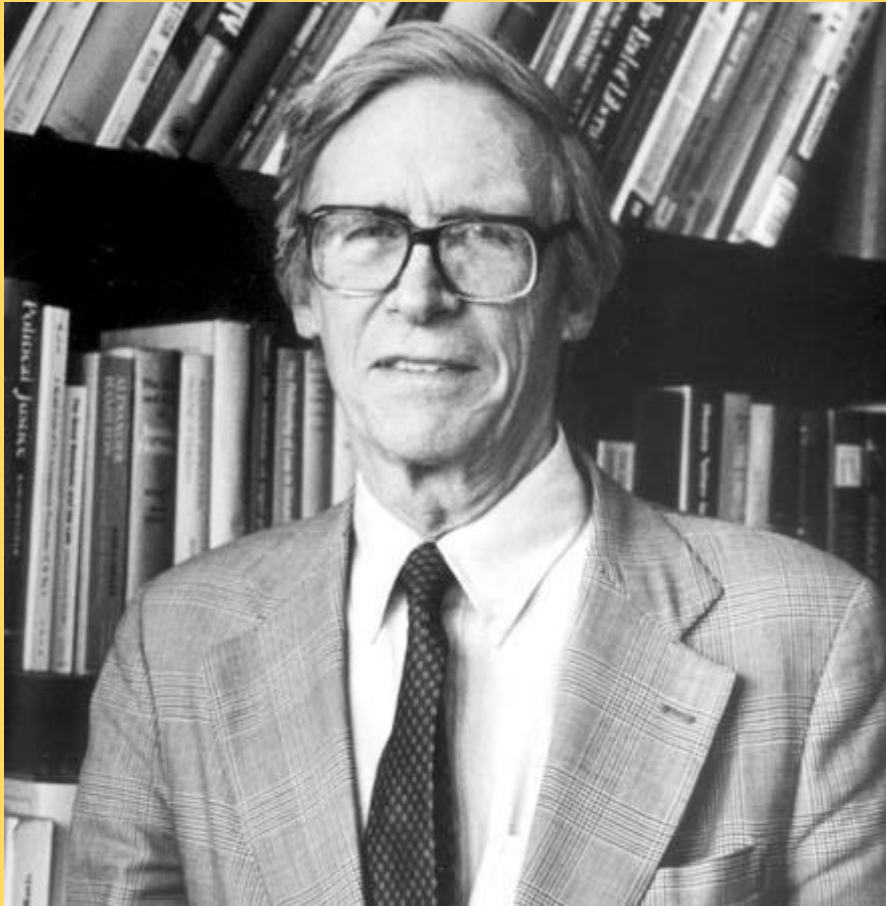




John Rawls

Veil of Ignorance

- The "veil of ignorance": people making political decisions imagine that they know nothing about the particular talents, abilities, tastes, social class, and positions they will have within a social order.
- When such parties are selecting the principles for distribution of rights, positions, and resources in the society in which they will live, this "veil of ignorance" prevents them from knowing who will receive a given distribution of rights, positions, and resources in that society.



John Rawls

Veil of Ignorance

“The principles of justice are chosen behind a veil of ignorance. This ensures that no one is advantaged or disadvantaged in the choice of principles by the outcome of natural chance or the contingency of social circumstances. Since all are similarly situated and no one is able to design principles to favor his particular condition, the principles of justice are the result of a fair agreement or bargain. For given the circumstances of the original position, the symmetry of everyone’s relations to each other, this initial situation is fair between individuals as moral persons, that is, as rational beings with their own ends and capable, I shall assume, of a sense of justice.”

Summary

Learning Objectives:

- Important ethical frameworks
 - Virtue Ethics
 - Divine Command Theory
 - Deontological ethics
 - Utilitarianism
 - Relational Ethics
- Their application in analyzing a computing system



Thank you for your
attention!

See you in the next
lecture!