CSC300: The Politics of Technology

Ishtiaque Ahmed
Fall 2024

Updates

- Readings for the next week are already posted on Quercus

- For those who joined late

  - First read the syllabus carefully

  - Find your tutorial group (email: TA).

  - If you do not know your tutorial group, email Lead TA

- Your assigned TA will help you get the answers of most of your questions

Say 'Thank You" to your TAs

- They are wonderful. They are also very kind and supportive.

- They are working hard both for their own study and research
  - and to help us

- Teaching is a care work, and it requires a lot of emotional labor as well as physical labor.

- A little encouragement and support from you can help them

Lec 2: Theories of Ethics

- Ethical Theories in Decision-Making
- Key Theories:
  - Virtue Ethics
  - Deontological Ethics
  - Utilitarianism
  - Relational Ethics

Lec 2: Theories of Ethics

- Core Questions:
  - Can these theories apply to technology?

  - Should technologies be treated like humans in ethical considerations?

  - How do technology, ethics, and politics intersect?

  - Is technology ethical on its own, or does it depend on human interaction?

  - What defines an ethical technology if people have different roles around it?

Lec 3: The Politics of Technology

Learning Objectives:

- How does technology become political?

- Whose politics does a piece of technology hold and exercise?

- Can a technology act politically all by itself?

- How to analyze the political act of a technology in a social setting?

Lec 3: The Politics of Technology
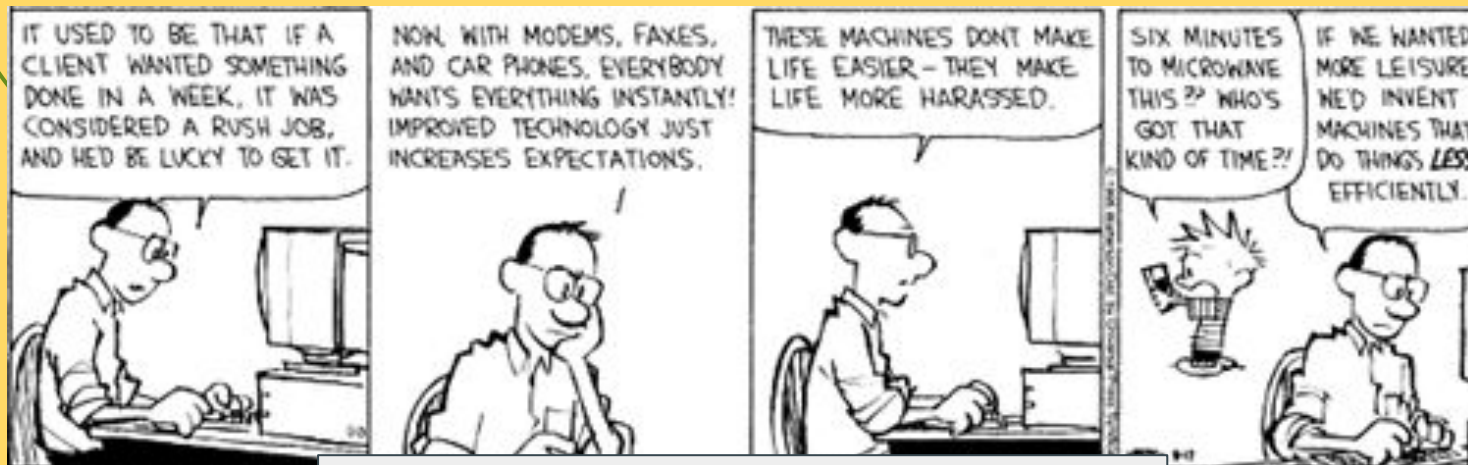
Human and Technology

- What are the roles of humans for making a technology ethical?
- How to analyze the ethics of a technology?

Why does it matter if technology has politics?

Social Context and its Politics

Technology is **not** designed or used in **isolation**

Labour issues: Work pace politics

Why does it matter if technology has politics?

Social Context and its Politics

Technology is **not** designed or used in **isolation**

IT USED TO BE THAT IF A CLIENT WANTED SOMETHING DONE IN A WEEK, IT WAS

NOW, WITH MODEMS, FAXES, AND CAR PHONES, EVERYBODY WANTS EVERYTHING INSTANTLY!

THESE MACHINES DON'T MAKE LIFE EASIER – THEY MAKE LIFE MORE HARASSED

SIX MINUTES TO MICROWAVE THIS?? WHO'S

IF WE WANTED MORE LEISURE, WE'D INVENT
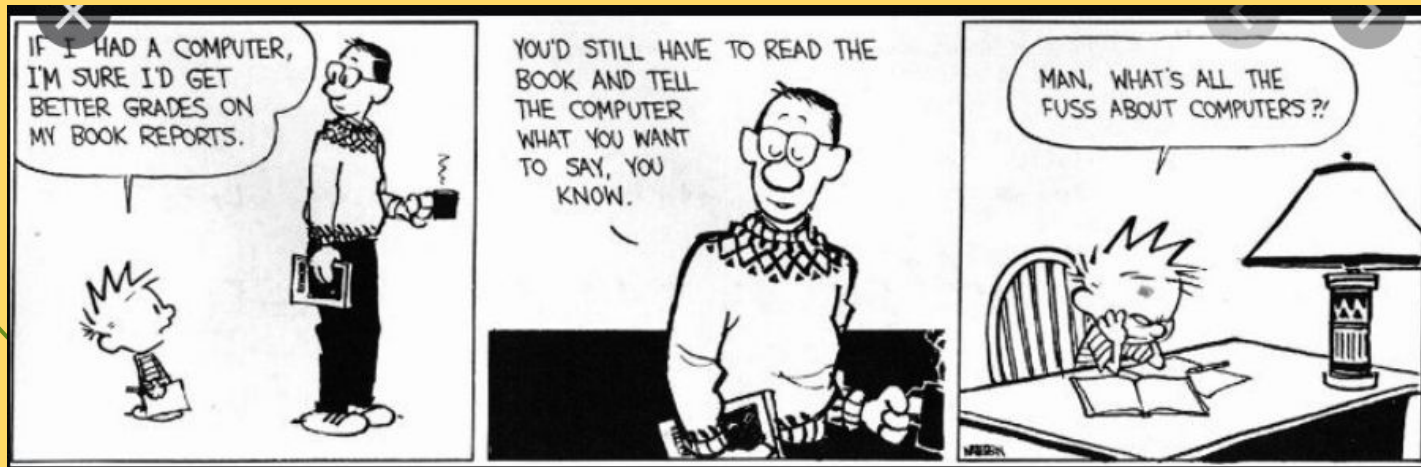
Is technology helping people or doing more harm?

Labour issues: Work pace politics

Why does it matter if technology has politics?

Social Context and its Politics
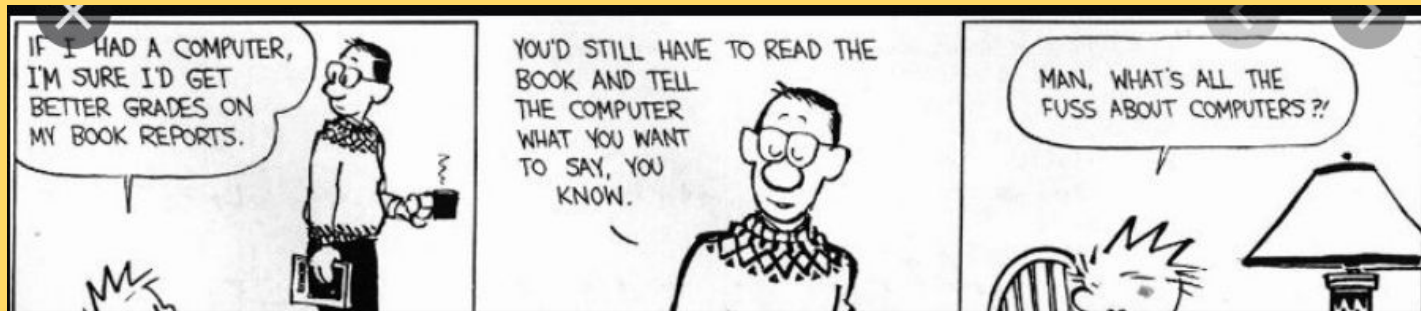
Technology is **not** designed or used in **isolation**

Managing Calvin's expectations 😊

Why does it matter if technology has politics?

Social Context and its Politics

Technology is **not** designed or used in **isolation**

IF I HAD A COMPUTER, I'M SURE I'D GET BETTER GRADES ON MY BOOK REPORTS.

YOU'D STILL HAVE TO READ THE BOOK AND TELL THE COMPUTER WHAT YOU WANT TO SAY, YOU KNOW.

MAN, WHAT'S ALL THE FUSS ABOUT COMPUTERS?!

Who is actually getting the most benefit out of a technology? (and who is being exploited?)

Managing Calvin's expectations 😊

11

Technology → **Society**

- Is this a unidirectional relationship or a more complex
- Can technologies can be neutral?
- How many ways can a technology be political?
- Example: Social Media like Facebook and Youtube

gray area

ONE WAY

SEVERAL OTHER WAYS

©John Atkinson, Wrong Hands

Four Theoretical Perspectives

1. Realism

2. Social Constructivism

3. Hybrid Constructivism

4. Differentiated Constructivism

gray area

ONE WAY

SEVERAL OTHER WAYS

©John Atkinson, Wrong Hands

Theoretical Perspective #1: Realism

Technologies are not merely aids to human activity, but also powerful forces acting to reshape that activity and its meaning.
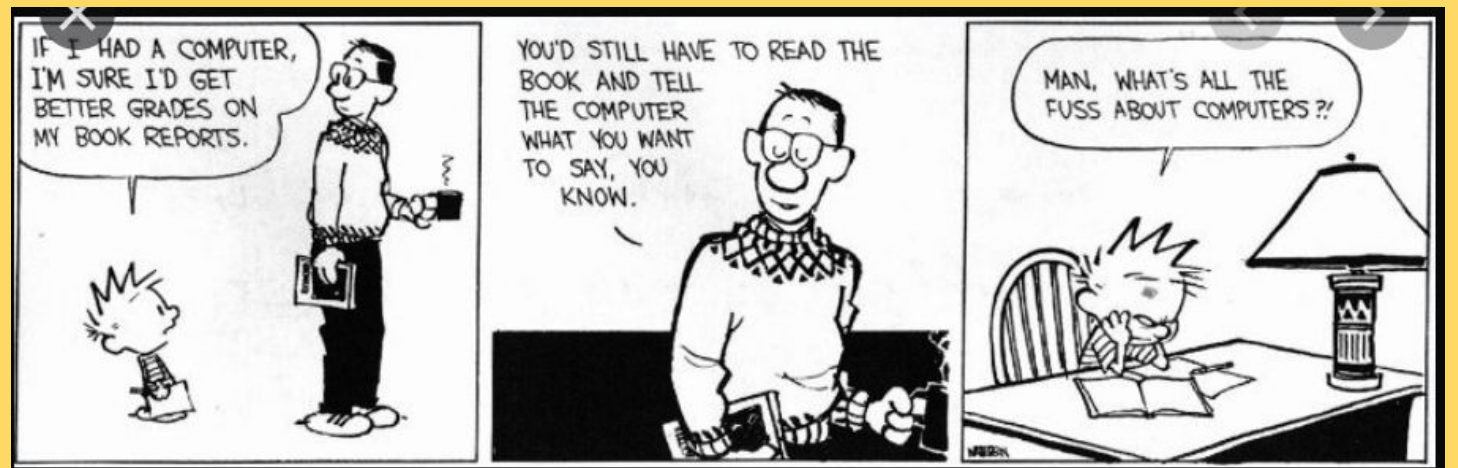
— Langdon Winner —

Langdon Winner - "Do artifacts have politics?" (1980)
Thomas Phelan Chair of Humanities and Social Sciences
Dept of Science and Technology Studies
Rensselaer Polytechnic Institute, Troy, New York.

Consider the following Examples

Facebook and YouTube enable users to exercise freedom of speech by creating and sharing user-generated content, accessible to others for free.

Or

Providing laptops or PCs to students in low-income economies improves their understanding and school performance.

Realism

Core belief – Only technology is responsible for social change

- Building blocks of society

- Instigators of social change or liberators – causally correlated

- Having its own agency, irreducible to agency of human agents – major independent variable

Realism

Core belief – Only technology is responsible for social change

- Technologies have inherent powers, making them democratic or authoritarian in any context of use.

- E.g. Inherently Political Atom Bomb needs an authoritarian structure in place for decision making

- E.g. Social media platforms democratize the discourse

can technology save the world?

Critiques of Realism

- Linear Causal Pathway

- Technologically Deterministic

- Lacks Social Representation

- Inability to explain results across a variety of contexts

Critiques of Realism

- E.g. 1 Amplification of Bias: Trolls and stigmatization during #MeToo and racial attacks during COVID-19.

- E.g. 2 Policy Failure: One laptop per child policy in low-income economies failed due to social power dynamics, infrastructure issues, and repair challenges.

Discussion: Politics of The Fare Transit Pass (8 min)

- In the Greater Toronto Area as well as many other metropolitan areas worldwide, local transit options often allow commuters to pre-load money onto a metro-card, often with discounted fare.

- In some cities, transit authorities have considered fully 'digitizing' the fare purchasing experience, and prioritizing these passes over single-use fare.

Discussion: Politics of The Fare Transit Pass (8 min)

Discuss in Breakout Rooms:

- How is this technology political?

- Who benefits and who is harmed?

- Perspectives from different users:
  - bus driver,
  - commuter,
  - transit officers, etc.

- Perspectives from different analytical lenses:

  - sociological
  - economic
  - accessibility

- Political context: Metrolinx's Eglinton LRT impact on Little Jamaica.

Theoretical Perspective #2: Social Constructivism

Social Construction of Technology

W. Bijker
Dutch Prof. Emeritus, Former Chair, Dept. of Social Science and Technology, Maastricht University, the Netherlands

T. Pinch
British sociologist, Former chair, Dept. of Science and Technology Studies at Cornell University, USA

Consider the following Example

Role of **<u>algorithms and advertising</u>** on social media platforms:
- Why we see what we see on our social media timelines?
- Who is making money out of the content/ads posted on these platforms?
- Who controls these algorithms that decide what is visible on users profiles or timelines?
- Humans!

Social Constructivism

Core belief: The politics of technology is constructed by its social representations

- Interpretive Flexibility: Social representations dominates the way technologies are constructed, interpreted and used
  - Just like textual representation, the most popular interpretation finds its use
  - Or the societal power dynamics make the interpretation popular in the users' imagination

Social Constructivism

Core belief: The politics of technology is constructed by its social representations

- Social representations define artifacts' political agency or affordances (Pfaffenberger, 1992)
    - Artifacts' perceived properties suggest use but lack inherent politics.
    - Society and behavior transform and animate these narratives.

Social Constructivism

- **Argument 1**: Artifacts in themselves may have some strong and weak physical properties such as constraints or affordances

  - Strong: Promote/prevent actions, e.g., Facebook newsfeed algorithms.
  - Weak: Merely promote or discourage, e.g., seatbelt beeps vs. interlocks, content reporting vs. immediate takedown.

26

Social Constructivism

- **Argument 2**: Reference to physical properties of artifacts because their 'readings' have become obdurate through 'closure'
  - Learn to read the artifact differently so that the constraint disappears, e.g. algorithms are written by humans
  - Methods of verification of physical constraints are subjective to their social construction*

Critiques of Social Constructivism

- Linear Causal Pathway

- Socially Deterministic

- Can't even cautiously credit artifacts with having certain physical properties
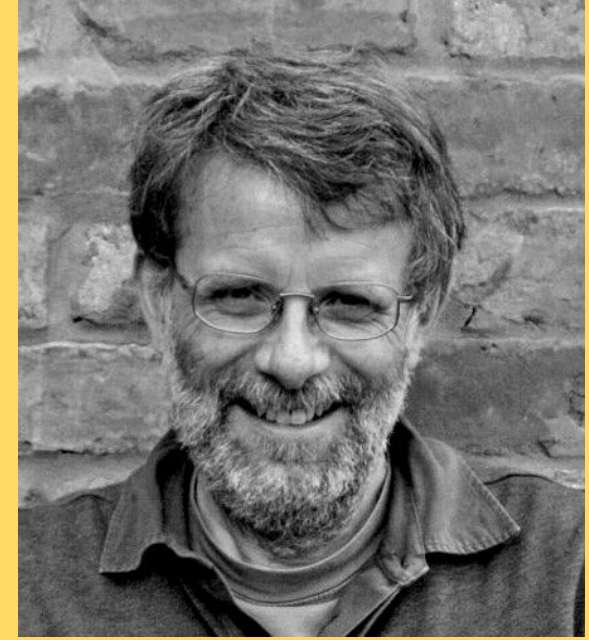
- Can't be expected to give a holistic account

Theoretical Perspective #3: Hybrid Constructivism

Bruno Latour
French Philosopher,
Anthropologist, Sociologist,
and Professor
Primary developer of
Actor-Network Theory (ANT)

Michel Callon
Sociologist and Professor,
One of the leading
proponents of ANT

John Law
Sociologist and Professor,
One of the key proponents of
ANT

Consider the following Example

Role of algorithms and advertising on news headline platforms:

Unintended Use Case:

- News headline platforms like CTV News can influence national elections.
- Many people use CP24 for news and information.
- Raises the issue of government surveillance to prevent misinformation.

Hybrid Constructivism

Core belief: For any given situation, entities interacting within a network are analysed using the **principles of generalized symmetry** as in *Actor-network theory* (Latour, 1987; Callon, 1987)
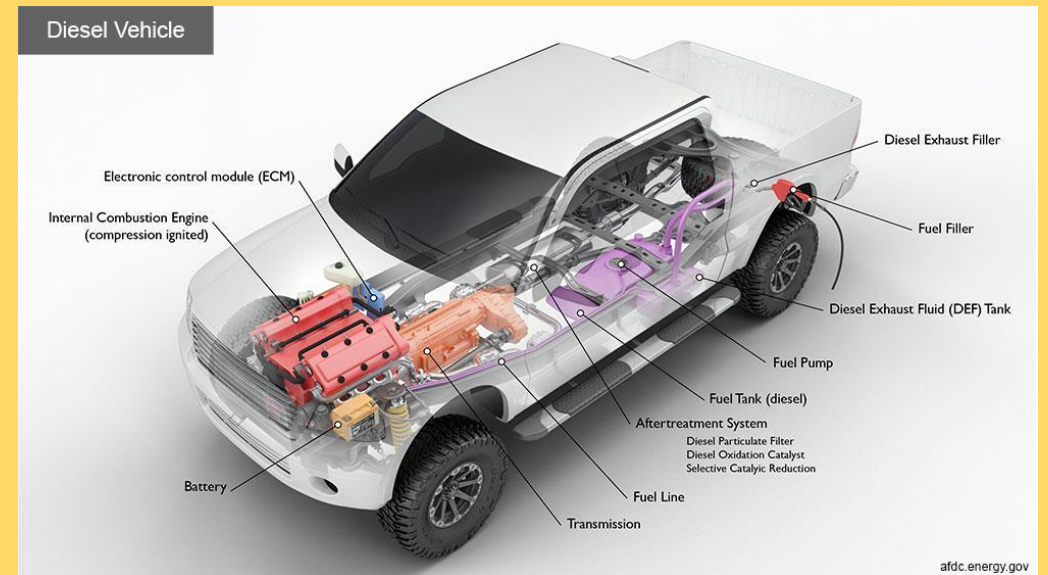
- Technical, natural, and social elements interact as human or non-human actants
- Both human and non-human actors can enact change equally

Hybrid Constructivism

- Politics emerges from interactions among Human and Non-human actants (H-NH-NH-H).
- Power arises from interactions, not inherent to single actants.
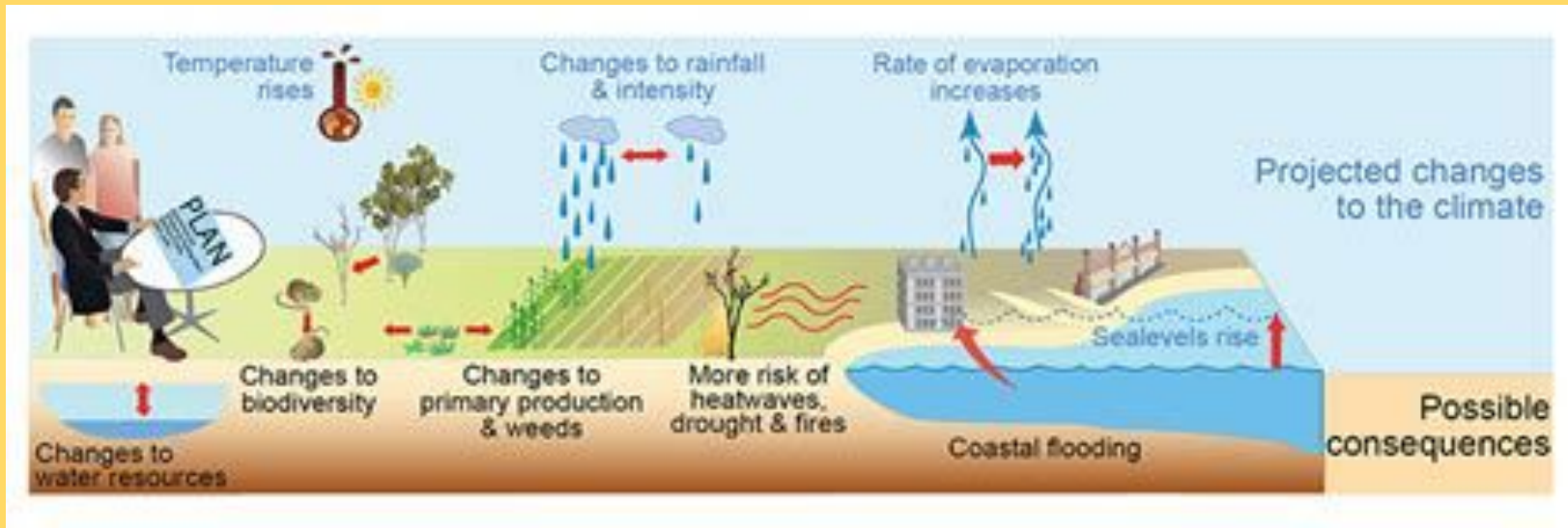- Stabilized networks form blackboxes, obscuring complex interactions.

Hybrid Constructivism: Examples

- A car is a network of components that are visible when it breaks down

Hybrid Constructivism: Examples

- Complex phenomena such as **climate change which depends on the interaction of different species on the planet and knowledge produced by scientific and social science disciplines about its measurement and impact**

Hybrid Constructivism

"If something is missing it is because the description is not complete" (Latour – Society is Technology made durable)

- Phenomena stabilize H-NH actor networks post-hoc.
- Generalizes artifacts' affordances and constraints.
- Defines network properties by efficiency, truth, profitability, and interest; domination results.
- Actants' perspectives converge to stabilize reality; low convergence indicates flux.
- Views technology and society as integral phases of essential actions, not separate.
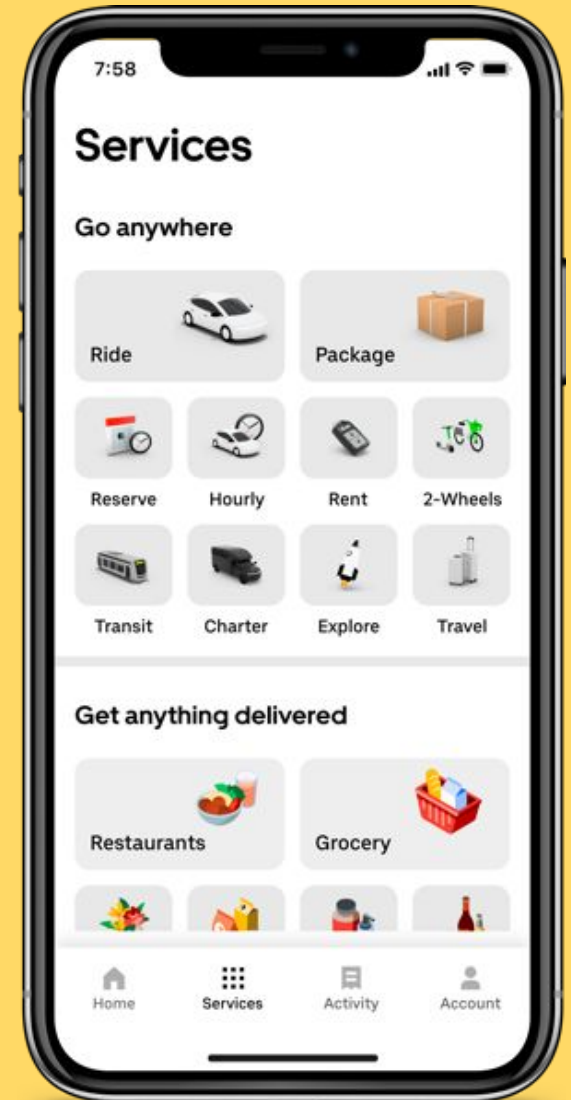
Critiques of Hybrid Constructivism

- Humans have a more diverse behavioral repertoire than non-humans

- Obscures the analytical differences in the interest of symmetrical treatment

- E.g. Viewing the entire scenario/big picture of the role social media platforms in influencing national elections

  - Due to the principles of generalized symmetry, it is difficult to determine who is responsible and to what extent

  - Different elements and their properties that enabled this
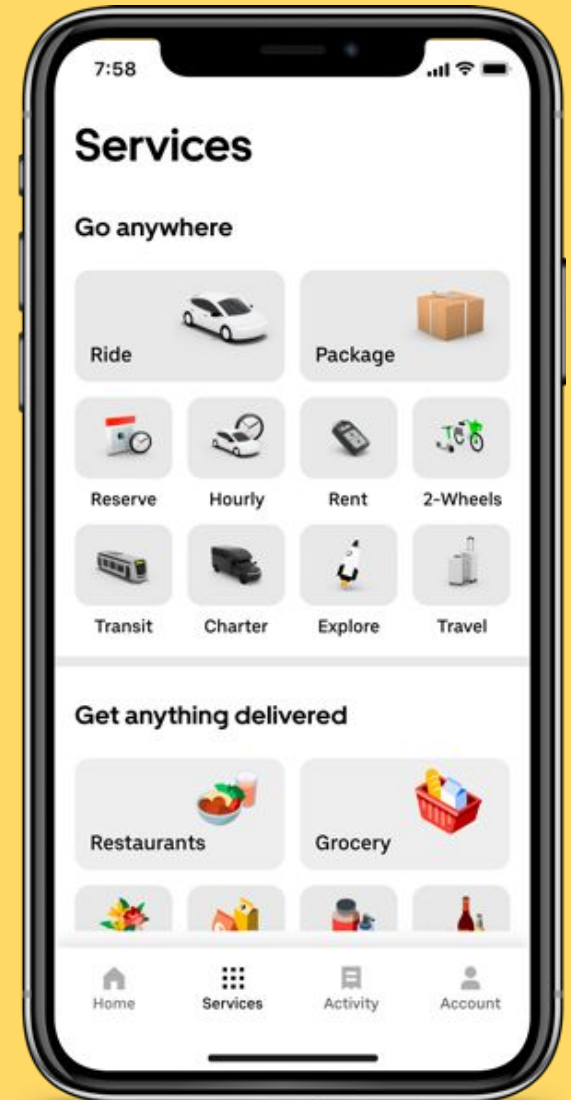
Discussion: Uber: Modes of Analysis (8 min)

Uber has changed the transportation sector. There are both benefits and complaints about uber:

- It has created jobs for many people.
- More flexibility for traveling without a car, in places without good public transport
- Reduction in carbon emission (when people share uber pool)
- Increase in carbon emission (due to additional driving to pick up passengers)
- Complaints about passenger safety, driver compensations.

Discussion: Uber: Modes of Analysis (8 min)

- How will you analyze the introduction of Uber in our society
  - Who are the actors?
  - What should be the ethical role for each of them?

- When is Uber good and when is it bad?
  - Is it possible to say - "Uber can never be good/bad for all at any given case?"

Theoretical Perspective #4: Differentiated Constructivism

Philip Brey
Professor of Philosophy of
Technology,
University of Twente

Theoretical Perspective #4

Differentiated Constructivism

Role of algorithms and advertising on social media platforms:
Unintended Use Case
- Ability of social media platforms such as Facebook to influence National Elections
- A lot of people use Facebook to read news articles or access other information

Differentiated Constructivism

- **Artifacts and Agency:**
  - Agency from material design structures and social processes.
  - Affordances and constraints: Realist (physical), Social Constructivist (social), or hybrid.
  - Rejects exclusive determinations, supports hybrid and differentiated constructivist views.
  - Hybrid vocabulary allows broader generalizations.

Example: Influence of Social Media on Elections

Asymmetry principles attribute differential agency to various entities. For example:

- **Technology Platform:** determines user access, exposure, and algorithmic attributes
- **Technology founders/managers:** make decisions and are influenced by advertising revenue
- **National/international lobbies:** influence promotion of candidates, may spread misinformation
- **Users:** exposed to content in echo chambers, leading to polarized opinions and voting decisions.

princeton.edu

Social media and the 2020 election

By Tom Durso, School of Public and International Affairs on July 28, 2023, 3:02 p.m.

6–7 minutes

Summarizing the theories using the example of Solar Panels

Realism: Technological determinism

Designing of Solar Panels revolutionized decentralized and pollution-free power generation, minimizing environmental impact, reducing expenditure on power generation in the long run

Summarizing the theories using the example of Solar Panels

Social Constructivism: Social determinism

Societal need for a clean fuel/technology led to the development of solar panels

Summarizing the theories using the example of Solar Power

Hybrid Constructivism:
- Analyzes human and non-human elements in solar panel design using generalized symmetry in Actor-network theory.
- Interaction of both led to developing clean technology.
- Uptake is expensive and challenging.
- Views society and technology as different phases of the same essential actions.

Summarizing the theories using the example of Solar Power

Differentiated Constructivism:

- Analyzes each actor in the network with asymmetrical properties.
- Social need drives solar panel development using human knowledge and technology.
- Faces competition from fossil fuel lobbies, lacking subsidies for solar panel companies.
- Decentralized technology remains costly for general purchasing power.

Considering some other examples

Application of different theories reveals different perspectives about technologies and the politics that they operate in and the politics that they create

- **Unique identification Project in Developing Economies – Biometrics Privacy Threat**

  A nation's list of its citizens for designing policies – using it for surveillance, targeting anti-government protestors and incarcerate them

Considering some other examples

Technology as an amplifier of Human Intent – K. Toyama

- The immediate success of Arab Spring in certain Middle-Eastern Countries vis-à-vis failure in other countries

- Politics of Platforms – Youtube as a 'Political' Platform as it strategically frames its services and technologies for profits, protective legislations and getting into the cultural imagination

Summary of the Theoretical Frameworks

- Neither realism nor social constructivism offers a complete picture regarding the politics of technologies

  - Linear

  - Denial of agentic properties to the other aspect

Summary of the Theoretical Frameworks

- Hybrid and Differentiated constructivism
  - Attempt to take into account all the entities involved in the interaction
  - While Hybrid Constructivism symmetrically analyses all the elements as 'actants'
  - Differentiated Constructivism deconstructs the elements and doesn't strip them of their properties – retains part realism and part social constructivism
  - to provide 'depth' to the generalized analysis of hybrid constructivism

Summary

- The impact of technology on a society depends on so many things
- A technology does not have the same impact on everyone in the society. We need to analyze who is getting benefits and who is being marginalized.
- It involves so many actors

Summary

- Ethical actions from each of the actors are needed to make the technology operate ethically
- It is important to understand this complex dynamics of technology in order to analyze its ethical position
- Ethical position also changes if we change the society, time, or location

Thank You!