

ENGR392 Notes

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Lecture 2

Technological Determinism

- History is a linear progression of technological development.
 - Certain technologies are bound to be developed(inevitable).
- Technology in a society is the primary determinant for how life is organized.
- Changes in technology leads to transformations in how society is organized.

Technology -> Society

“The windmill gives you society with the feudal lord; the steam mill, society with the industrial capitalist” - Karl Marx

- Critiques:
 - Internet involved human agency and descision.
 - Some internet-like systems predated it.

Social Determination of Technology

- Social groups produced these technologies for these use.
 - Company owners and workers formed factory.
- Hard to defend because doesn't account for how society is shaped by technology.

Society -> Technology

Co-Production (brief)

- Soft of position of both.
- Mutual influence.

Co-Production of technology and society

- Do artifacts have politics? - *common responses*
 - Objects don't have politics, they are neutral. They can be used for good or bad depending on the people that use them: **Social Determination of Technology**
 - Modern technologies like internet bring democracy, or nuclear power brings authoriatarian governance: **Technolical Determenism**

Technical design and social effect

- Langdom Winner (author of reading) criticizes both. Because both matter : you must take a soft framing of both.
 - He says some objects can be designed to have political properties, *but not all objects are political*.
- Robert Moses racist bridges and roads example:
 - Racist society influencing the design of technology which in turn then affects society.

- Tomato harvester example:
 - Increased efficiency but also concentrated wealth in the rich.

Engineered systems that are strongly compatible with certain political relationships

- Solar energy is compatible with democracy.
 - *not that the two are co-requisites.*
- Nuclear energy is more compatible with authoritarianism.

Lecture 4 - Indigenous Peoples

Kanien'kehae:ka Territory

- Montreal is located on unceded Mohawk land.
- Kanien'kehae:ka was an agrarian society.
- First contact : 1534 - Jacques Cartier.
- Kahnawake was founded as a Jesuit village for Mohawk converts in 1667.
- Prior to 1889 the traditional governance was operated by a council of seven chiefs that were the heads of their respective clans.
 - This government continued to exist as a shadow organization.
- Traditional political structure was maintained until the Indian Act of 1876.
 - Indians and their lands are the responsibility of Canada.
 - Created system of band elected chiefs and councils.

Analysis of Justification of Colonial Occupation of Land

- Indian reserves account for just 0.02% of the land.
- **Doctrine of discovery:** Papal order (1492) for stealing non-Christian people's land
- **Terra Nullius:** Native populations are not full human beings. They are not being used productively.
 - Racist logic.
 - Did not consider local culture or systems of governance.

Colonialism and Technology

- **Colonialism:** domination and dispossession between an indigenous majority and a colonizer minority.
 - Mechanism for exploiting the resources and labour of the native population.
 - Historically occurred extensively since 1492, but is still ongoing.
- *Colonialism of rule:* ruling a population without the intention of permanent settlement.
Ex: British rule of India.
- *Settler Colonialism:* logic of elimination of native population and way of their life.
- Does colonialism bring development, law, education (railways)? or have negative social effects (railways were made to steal resources).
- **CPR Bridge between Kahnawake and Mtl (1887)**
 - Kahnawake not consulted.
 - Intended for railway not pedestrians, Mohawks walking to work banned.
 - Appropriated land from Kahnawake. Similar appropriations for Mercier bridge.
 - Benefited Canadian Pacific Railway
 - Promoted central form of life and property.
- **Oka Crisis**
 - Standoff in Kanesatake for 91 days.
 - Oka municipality made plans to extend a golf course into a sacred burial ground.
 - Kahnawake supported by blocking the Mercier bridge.

- Issue was larger and issued
 - Arthur Manuel claims that these demonstrations show that Indigenous people refuse to accept that Canada had moral grounds to take their land.
- Conflict of values
 - Settlers see land as a commodity.
 - Indigenous people see land as a relationship.

Lecture 5 - Race as Technology

- Race and Technology are coproduced?
- Most Canadians think the relations are good.
- Visible minorities earn on average 80cents per dollar made by a white person.
- Visible minorities with a uni degree make 87cents per dollar made by a white person.
- Black, Indigenous, and Arab people are 4x likely to be stopped by police in Mtl.
- Black people are 20x more likely to be killed by police in Toronto.
- 30% of the prison population is indigenous, but only 5% of the population is.
- How to explain wage gap:
 - Problem in communities. Cannot explain wage gap for uni degrees.
 - Bad apples or insitution?
- Under the law we are equal.
 - But racism is more sneaky.
- Racism describes an ideology that organizes society through racial categories and social hierarchies.
- People racially code (even with names).
- Racist hand dispenser?

Lecture 6 - Automation and Society

- Everything comes from a market in capitalism.
 - Was this always the case?
- Tribe: Food can be distributed among families.
- Feudal: Landlord gives peasant land where all profits go to landlord and other section where they get the profits.
- **Capitalism** a way of organizing society that revolves around the production of commodities for the purpose of generating profits.
 - Society divided between capitalists, workers, merchants, those in professions.
- **Capitalist:** people who have capital.
 - Make money through surplus wealth generated by workers.
 - Increase profit by increasing productivity. *Drives innovation?*
- Examples of automation increasing productivity:
 - Scanner in grocery store.
 - McDonald booth.
 - Division of labour -> production line.
 - Pampers.
- What are the ideas behind the ways we talk about automation?
 - “Robots are killing jobs” - Technological Determenism.
 - “Businesses are using robots to increase productivity” - Social Determenism.
 - “capitalists are using robots to get richer”

Lecture 7 - Gender and Technology Coproduced

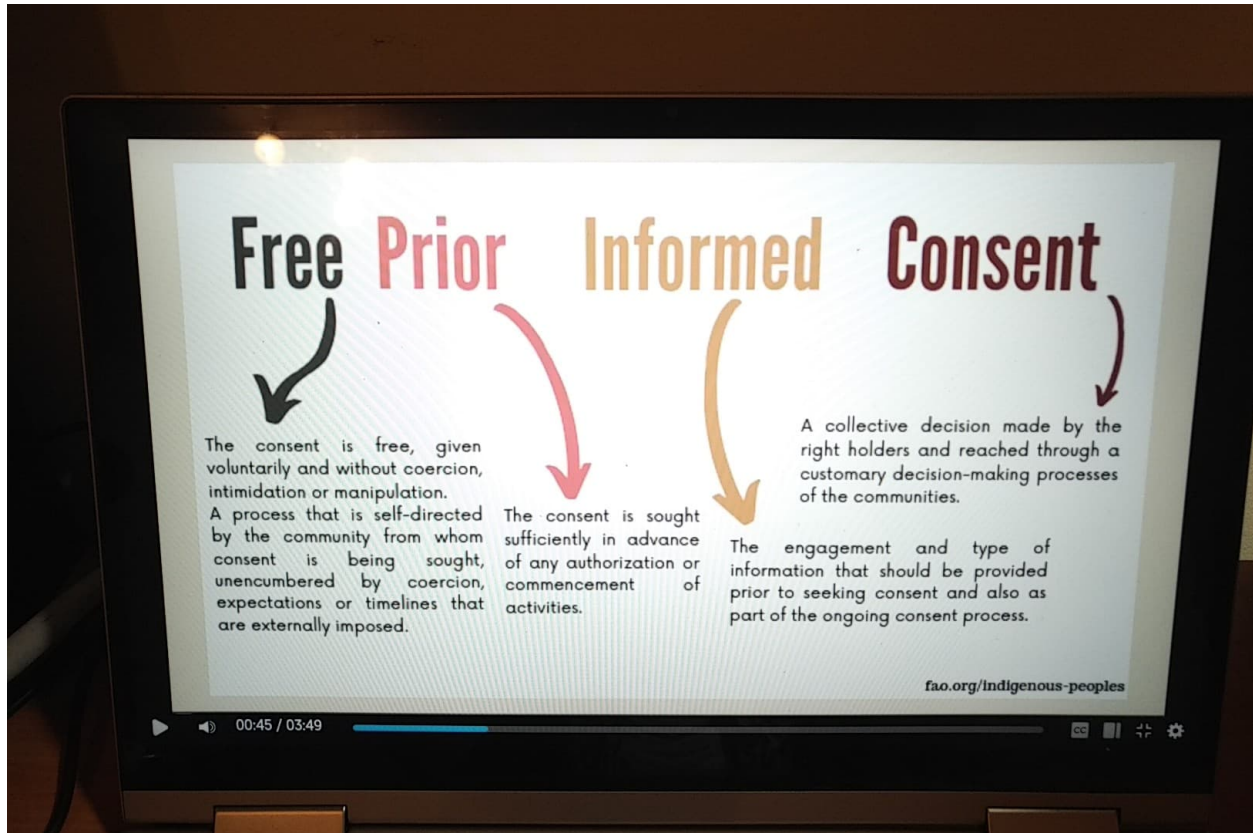
- Gender pay gap.
 - Less leadership roles, tech jobs.

- Women do less paid work, but more unpaid work.
 - In total more work than men.
- Is the gap caused by society, biology, or tech?
- Gender norms, divisions, relations and technology related.
- Gender shapes technology.
 - Engineering is ‘masculine’.
 - Tech is often designed for men and their interests.
 - Prototypes consider the average WHITE male as the baseline.
 - Danger for pregnant women.
- Technology shapes gender.
 - Tech has social affects.
 - Dyson vacuum toy.
- Do robots have gender?
 - Why are personal assistants female??? WHOAHHH.
- Microwave designed for men but appropriated by women.
- Techno-feminism
 - Analyses the co-production.
 - Inquires into men’s monopoly of tech and their technological skills.
 - Gender power relations in tech. Less opportunity for women to learn tech/less time given.
 - Calls for re-imagining of gender equal tech.
- 1/3 women has experiences sexual violence.
- Missing and murdered indigenous women 16% of all female homicides but only 4% of female population.
 - Near resource extraction sites.
- Biological-Determinism.
 - Women are MEANT for the kitchen.
- Social determination of Gender.
 - Sex is biological.
 - Gender is a social CONSTRUCT.
 - ‘men’s work’ and ‘women’s work’ is socially constructed.
- Patriarchy
 - Set of practices and institutions through which men dominate, oppress, and exploit women.
 - Household, workplace, state.
- Patriarchy co-produced with capitalism
 - Capitalism needed manly paid work and unpaid social re-productive work.
 - Social determination of gender meant to serve the PATRIARCHY.

Lecture 8 - The state, law, and policy

- Innovation is human, about creativity, and foolishness.
 - not about money or government.
 - But was the iPhone a combination of many different technologies?
 - Public and government research went into this. But Apple just reaped the profits. * Liberal theory of the state + state functions to serve general interests of citizens. + Market choices and elections to ensure equity in society and democracy. + Minimal government intervention in market for creativity. + Certain activities are prevented for individual rights.
- Critical theory of the state
 - State servers to serve the capitalist class.
 - Government is a centralization of power that enforces power through violence.
 - Funds research and innovation for business than the general population.
- The law as a contested space.
 - Which law has jurisdiction? Canada, corporation claims, province, natives, lobby groups, political parties, band councils
- Indigenous people use band councils or protests to enforce their law.

- The court injunction is the contemporary mechanism for justifying the colonial state's dispossession of indigenous territories.
- The United Nations Declaration of the rights of indigenous peoples.
 - Free prior informed consent for any project on indigenous land.
 - International law, many countries signed including Canada.
 - *Free*



Lecture 10 - Design Justice

- The positives of technology :)))0
- First priority of engineers is clients and society. Personal interests and profits come second.
 - Guided by professional morals.
- Fundamental Values:
 - Competency.
 - Ethical Conduct.
 - Accountability.
 - Social Commitment.
- Capitalism, exploitation, racism, patriarchy and colonialism are potential inputs and outputs of technology

Design Accountability

- Nothing for us without us is for us.
- Those most affected by the outcomes should lead and own digital design processes and products.
 - Were homeless people part of the design of anti-homeless benches.

How do we code with equity?

- Much of this tech came from disabled peoples DIABOLIC DEMANDS.
- Can AI remove biases? Or are they reproduced.
 - Sexist Amazon hiring algo.
- Breast pump not suck
 - Hackathon