1) **What was confusing/needs clarification?**
What is the meaning of a tacit nature?
How can a process be a technology?
Proper understanding of the 6 definitions.
Why is it important to differentiate technology and science?
The two pathologies
What does the author mean by symmetry?

2a) **Examples of operational principles:**
Metric system
Gear ratios and power transmissions
Touch screen on Smartphones
“A company that uses the operating principle of putting accountability in the hands of the employees themselves instead of using managers to manage employees.”
Making a phone call using a phone
Pressing a power button turns on your computer
Invention of the smallpox vaccine by Edward Jenner
Use of perfume to mask bad smell
A government uses laws in order to set boundaries on how they want the people to behave

2b) **Examples of tacit technological knowledge:**
Driving a manual car and changing gears
Riding a bike
Learning to speek
Walk
Remote Control
Aiming in sports (soccer, basketball, etc)
Cooking without following a recipe
Fight
Swimming
Touch screen
]

3) **What did you make of Nightingale’s two “pathologies”? What do they mean? Do you agree with his assessment? Can you think of examples that demonstrate these ways of thinking?**

Write your technologically determinist statement about the world below:
Video games makes us lazy

Technology (social media, etc) keeps us from communicating with each other

- Human choice: why choose to communicate with people you don't necessarily enjoy/like when you have so many other options at your disposal (talking to people you like, playing a game you enjoy, etc)
- Not that we're communicating less - but the way we do it is less genuine?
    - Perceived effort going into communications
    - Communicating with the same frequency seems less significant because there is less physical effort to be made
- Doesn't account for emotional effort that communication takes
    - It's draining to communicate constantly

Technology makes us read less

- On average we are consuming more words
- Evolution of language. Not necessarily a bad thing that we're consuming un-edited/proofread language.
- Human choice: people are simply choosing to read less (on paper)

Video conferencing software is changing how people collaborate

-Historical POV: Software was only large scale adapted once it became necessary, the software wasn't adopted before that

-Engineer POV: Existing software is optimized to allow for some interaction to happen in a context where that is no longer possible

Service industry is in decline; ex. Tablet Ordering, Bank Tellers

Fabric of daily life
-Embrace socio technical complexity
Hand in hand with social, economic, and political change

-Automation of Tasks;
"Man is by nature a technological animal; to be human is to be technological"
"... Such a desire has existed within the human heart for a long time. Technologists, knowing of this desire, were, in a sense, "commissioned" to invent the automobile.

The advancement of weapon technology caused the world war

Supermarkets have eliminated hunting and gathering as a basic skill

- Horticultural societies replaced hunting and gathering with excess resources being used to trade. The tools used to trade changed over time.

The naval industry has given way to the global market. (The creation of large boats has expanded most local markets to trade with each other globally, rather than only trade amongst themselves. Example: The spice trade (Asia to Europe).)

- The means of food preservation have contributed
- There are other means of transportation (Ex: By land, trains...)
- Local market/trades are popular
- Local market are environmental friendly
- Creation of commercial airplanes has contributed a lot

The application Tinder destroyed romantic relationships

- Forgets that people would meet in bars and other places for the sole purpose of hooking up
- Falsification: there are people who got into long romantic relationships by meeting through dating apps
- The target market is not necessarily people looking for commitment

If you have questions about this week's content, or if you'd like me to explain anything in more detail, please write this below:

Internalist vs contextualist perspective

AT ANY TIME, write things here that are unclear or that you would like me to discuss in more detail:

Could the scientific method be considered as a thought collective?

Can the political view of a group be a thought collective? Ex: Liberals

In your FIRST breakout room, respond to the two questions below:

Identify a "thought collective" that you belong to. What are some of the common ideas or beliefs that this group shares?

Scientists: trying as much as possible to let the experiment dictate our worldview rather than let our preconceived notion of the world do so.

Gym Environment

- Proper Diet
- Proper Training regiment
- Form and use of equipment

Political parties: two main polarizing groups: The Conservatives and the Liberals

- Conservatives advocate for traditional values
- Liberals advocate for progressive values

Engineering: Where all engineers try to design things as efficiently as possible in the preliminary design phase.

Software: Having this preconceived notion that automation and machine learning should be applied everywhere in this modern day and age.

:(

Minimalist design in app development

- Less is better, more modern
- Too many things on a page = it looks old fashioned, messy, even if it's actually a recent program

Freedom of information (internet generation??) ⇒ hackers?

- Things behind paywalls is… bad
- Things on the internet used to be much more accessible but now things are behind paywalls that weren't before
- Expectation that things on the internet should be free and easily accessible

Design safety for engineers

- Ethics & moral concerns as well

- Main concerns have shifted from results to safety

Professional associations (i.e. engineers, doctors, lawyers, ...etc.)

r/wallstreetbets

Any big enough subreddit then? :D

What do you think about Schatzberg's characterization of engineers as "ideological"? For example, do you think that modern engineers share a "progress ideology," or any other ideologies? (You don't have to write down your responses to this one, though you are welcome to.)

If there is one ideological bend to engineering, it is definitely the drive for efficiency

Progress ideology in the push for use of composite materials
Promotion of 6-sigma methods

Accurate but can be expanded beyond engineers.

- Examples, perhaps: safety design, minimalist design, the way progress "looks" and how we achieve it
- Crunch culture? (e.g. in gaming industry)

Schatzberg's example seems to be very American-centric. I do not think a country like war-torn Germany who had to pay for the reconstruction of their neighbors and who was fighting a war on both side and who was starving for ressources and who prides itself as a nation on how efficient it uses those resources would have bothered to invest in a product that didn't have a better potential in the long run.
TLDR: the example does a disservice to the point being made

Progress ideology can be defined as pushing ideals perceived as beneficial to society regardless of whether or not they are actually beneficial. The modern drive to push millions of individuals to become computer programmers is an example of a progress ideology.

In your SECOND breakout room, respond to the two questions below:

In Takeshita's article, what are some of the factors she describes that influence users' choices about IUDs?

Marketing, price, durability (5 or 10 years), effectiveness, side-effects, social and cultural influence, environment, accessibility, safe user profile

Perceived usefulness (will it do what i want it to do)

Consider a different technology (if you're struggling to pick one, take one that someone in your group chose for their first mini-assignment). Do you think that the factors described by Takeshita also affect users' choices in this case? How might user choice be influenced for your example? (Again, you don't have to write down your answers to this one.)

- Laptops
  - Battery capacity
  - OS (Mac OS vs Windows)
  - Memory size
  - CPU speed
  - Screen size
  - Touchscreen enabled vs disabled

- E-ink tablet
  - Price (expensive)
  - Side effects.. Less money LOL. reduced eye strain for reading
  - Environment: save paper
  - Marketing: marketed towards entrepreneurs, young professionals, people who want to feel productive
  - Durability: pen nibs need replacing because they wear down. Notes last longer (no need for scanning, just export digital copy)
- Central heating system
  - Price
    - Alternative = small/portable heaters (accessibility issues??)
  - Environmental context
    - climate. (e.g. if you live near the desert.. You don't really… need.. one….)
    - Age of house (older houses)
  - Environment: better than wood stoves
  - Social/cultural influence:... not really? Pity if you don't have one but need one?
  - Effectiveness: power efficiency, capacity (amount of space you need to heat up)
- Computer OS updates
  - Organizational vs consumer users
  - Organizations tend to not jump onto the latest updates

*People will consider the same criteria, in a general sense, when taking into account what to buy. There will always be a cost vs benefit thought process regardless of the product.

As always, let me know here if you have questions about this week's material, or if there is anything that you would like me to discuss in more detail:

Discuss ONE of the questions below with your group. A group member should be prepared to summarize your discussion for the class.

1. **What does Langdon Winner have to say about technological determinism and social constructionism? How does his argument relate to these ideas?**

- Langdon said he took a "both/and" approach for the following 2 understandings when it comes to how politics overlap with technology
    - Specific features of a technology can be convenient for propagating/establishing certain patterns of power/auth
        - Voluntary imposition here
    - Unchangeable properties of a technology forces particular patterns of power/auth
        - Involuntary imposition
- Politically imposed technologies = social constructions
    - A bit of voluntary imposition
    - The technologies here do not impose patterns of power/authority (politics), but can be used by people to impose their own desired patterns.
        - ⇒ again, peoples' choices
    - Solar energy example goes here
- Accidentally political technologies = technological determinism
    - More involuntary imposition here
    - Even though the technology itself wasn't developed with the intention of creating a political change, it *did* cause some.
    - His atomic bomb weapon example
        - Inherently political
        - Can't change the design
        - Thus deterministic

2. **What connections can you make between Eric Schatzberg's argument about ideology in technological design, and the examples that Langdon Winner discusses?**

Ideological association with nuclear energy: Stable (security of supply), powerful, autocratic, unclean, risky

Ideological association with renewable energy: democratically run, clean, high tech, desirable

Choice of energy is not only governed by facts and possible production but the perception of the technology. People shy away from nuclear energy (which is reliable) because of associations with Chernobyl

3. **How does Ruha Benjamin's chapter demonstrate Susan Leigh Star's arguments about infrastructure?**

The two authors' ideas can be related in part as the following:

In the case of the social credit, the system is biased as an infrastructure with an installed base.

In the soap dispenser example, the embeddedness of the dispenser in the bathroom infrastructure

4. **How can you connect Ruha Benjamin's chapter to Paul Nightingale's description of how technological design happens?**

Paul Nightingale argues that technology evolves through several iterations from design to testing. Ruth Benjamin described a situation where humans, being part of the design cycle, attempted to develop an objective system to classify beauty. However Beauty.AI inevitably took human biases into consideration for its classifications which ended up favouring fair skin over darker tones.

Based on operational principles, Ruha argues that artifacts are designed to be reliable for the most number of people using that technology. Redesigning such artifacts to accommodate a minority can pose a number of questions if the execution is faulty.

Also, Benjamin's chapter may be steering towards the fact that the current design cycle could be flawed, and that another model of designing may be required to face the current social situations such as race.

This space is for asking questions and requesting clarifications!

Discuss ONE of the sets of questions below in your breakout room. Someone from the group should be prepared to summarize your discussion for the class. If you feel like you've exhausted the topic and there is still time left, move on to one of the other questions.

1. Rohan Deb Roy describes differences between "decolonizing" science and a "science must fall" approach. How does he characterise the differences between these approaches? What do you think of his argument?

- Decolonise science : ' We need to decolonise science by recognising the true achievements and potential of scientists from outside the Western world '.

- "Science must fall approach" is a much more radical approach to reaching a solution.

- "science as a whole should be scrapped and started again in a way that accommodates non-Western perspectives and experiences." - This quote is spoken as if science is an invention and not a discovery, science is not something that can be scrapped

The slogan "Decolonize Science" will always end up with the extreme of :Science must fall" because when we ask people what the word *science* means, the definition will almost always relate to the scientific method and the body of knowledge acquired through that method. The scientific community and the academic institution would at best be a footnote at the end of the definition. So the slogan is very misguided.

Not only that, but looking at history, it is science that has decolonized the world, and not the world that has decolonized science.

2. Hēmi Whaanga poses the question, "can an intelligence, or an artificial one at that, be used to colonize something or someone else?" What is his own response to this question? What do you think about it?

There's something very ironic about both wanting to preserve indigenous languages and wanting to at the same time wanting a universal response to this issue:

We do not yet know just how it will unfold, but one thing is clear: the response to it must be integrated and comprehensive, involving all stakeholders of the global polity, from the public and private sectors to academia and civil society

- Author doesn't really answer the question
- Colonizing: exerting power over ppl
- AI is already used to exert power over ppl
    - Insurance algorithms determining if ppl are "eligible" for life insurance
        - Inherent bias in the datasets (often use historical data)
    - Algorithms for banks => determine whether or not ppl can get loans
        - We live in a capitalist hellscape. Money is power
    - CV screeners that stop ppl from getting jobs
        - Ditto. Jobs => money => power

3. What kinds of progress narratives do you think are prevalent in today's society? Which progress narratives, if any, do you personally think about or believe in? How do these progress narratives relate to technology?

- Proof of progress is seen in automation
    - E.g. use of AI
    - Frees people from having to do "menial" or lower complexity jobs
        - I.e. they can contribute to other progress in other areas now that they're not being "held up"
    - Personal feelings:
        - Only really beneficial to people in positions of power
        - Removal of low complexity jobs without providing any sort of infrastructure or help for people who lose those jobs to learn new skills and get other better jobs
- Increase in bodily autonomy is proof of progress?
    - Decrease of potential poverty
    - Sort of similar to enlightenment progress narrative
        - "liberate people from political or social oppression" (from your slides ♥)
- Independence
    - E.g. moving out, starting your own business, supporting yourself, all proof of progress, all goals we are moving towards (in the west esp.)
        - In the east success is a determined more by how much you can give back to the community
        - If you become super successful with your startup, that's one thing, but if you support your family and parents and create job opportunities within your community, THEN you're seen as having created significant progress
- **Taking religion as a social technology**
    - Progress narrative: absence of religion is progress

        - The idea that if you're an atheist you're enlightened
        - Relying on scientific proof, etc.
    - Progress narrative: strict adherence to religious rules is progress
        - Dedicated to a cause
        - The more dedicated you are, the more you've studied, the more you know, the more you've progressed towards the final ideal state of religious enlightenment
- Also uhh maybe
    - Determination consistency and commitment as personality traits = progress
        - That person is going to go far, going to have a lot of personal progress