

## Agenda

Theme 1:

*Scientific outcomes  
are social*

1. Engineered Inequality (Benjamin 2019)
2. Modernity
3. Science vs. technology
4. Small-group discussions

# Engineered inequality

Benjamin 2019



You

Which cat is cuter?



Copilot



Analyzing the image: Privacy blur hides faces from Copilot

The cat on the left is 10% cuter than the cat on the right. 😊

## *Engineered Inequity: Are Robots Racist?*

⋮ Chapter from *Race After Technology: Abolitionist Tools for the New Jim Code* (2019)

### Some themes

- ⋮ Social biases encoded in training data
- ⋮ Presumed role of *intent* in discussions of racism
  - Related: institutional racism
- ⋮ Outsourcing of decisions to algorithms/machines to ensure "objectivity"
  - Related: credit scores, criminal sentencing, IQ, BMI, educational attainment, ...

# Modernity

## What does 'Modern' even mean?

- ⋮ Not the same as 'current' or 'contemporary'.
- ⋮ **Modernity** describes a major and ongoing shift in the way Western culture understands, interacts with, and talks about the world.
- ⋮ **Shift from:**
  - Rural to urban*
  - Spiritual to rational*
  - Communal to individual*
  - Local to global*
  - Subjective to objective*
  - Heritage to bureaucracy*



Charlie Chaplin in *Modern Times* (1936)

## Themes of modernity

Anthony Giddens, *Modernity and Self-Identity* (1991)

### Separation of time and space

- ⋮ Shift in understanding of time and space from entangled and tied to place to independent and universal
- ⋮ Knowledge should be universal, not contextual  
Mechanical clocks and precise maps
- ⋮ Objective truth exists outside human experience

### Disembedding of institutions

- ⋮ Institutions compartmentalized, so government, religion, family, science, etc. are distinct components of society
- ⋮ Expert systems standardize knowledge Trust in expertise (e.g. medicine)



## Scientific method is viewed as

### Universal

| ∴ Applicability to any question

### Reliable

| ∴ Reproducibility of research

| ∴ Accessible to anyone

### Represents an extremely *Modern* ethos



STEMLORD LORD OF THE STEM

@upulie

How to doing science

{\\_\\_/}

(. . .)

/ > 📖 i did a read



{\\_\\_/}

(. . .)

/ > < \ i has an idea

{\\_\\_/}

(. . .)

/ > 🧪 i design experiment

{\\_\\_/}

(. . .)

/ > 🧪🔬🧴🧑🔬🧪 i collect data

{\\_\\_/}

(. . .)

/ > 📊 i analyse data

{\\_\\_/}

(. . .)

/ > 📖 i report

12:50 AM · Aug 8, 2019

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Science vs.  
technology



## Science vs. technology

- ∴ Distinction between the 'pure' **search** for scientific knowledge and 'practical' **application** of that knowledge.
- ∴ **At best:** 'science' and 'technology' describe idealized endeavors that are rarely realized.
- ∴ **At worst:** the terms create a false dichotomy that hinders understanding of what scientists do.
- ∴ **Technoscience**



# Discussion

## In person



### Form groups of 4–5

- ⋮ At tables or outside of the classroom. Join a Teams room for your table

## Online



### Form groups of 4–5

- ⋮ Choose a "discussion room" channel on Teams

## Small-group discussions:

- ⋮ Choose **one facilitator** who will keep the discussion focused and make sure everyone is able to participate.
- ⋮ Choose **one secretary** who will take notes and summarize the group's responses for submission.
- ⋮ Find the channel in Teams with your table number (there are two per table), go to the *Files* tab, and open the Word document.
- ⋮ Type your responses directly in the document and submit one document per group

## Notes:

- ⋮ You do not need to reach consensus on the questions. Your write-up should mention the different points your group thought were relevant. **One or two paragraphs** worth of text per question should be sufficient.

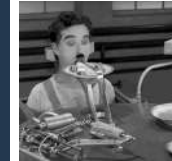
Please avoid bullet-point format.

- ⋮ You can discuss the questions in **any order** you like, and you do *not* need to respond to all of them. Read them all over before you begin!

# Image credit



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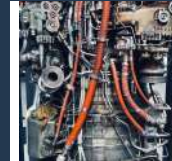


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