

Technology & media in social life



Science, technology, and Society

What is “technology”?

- Textbook: “The application of science to solve problems in daily life.”
- Frequently used more broadly

Consider a tiny innovation commonly found in European hotels: attaching large cumbersome weights to room keys in order to remind customers that they should leave their key at the front desk every time they leave the hotel instead of taking it along on a tour of the city.

Latour, Bruno. “Technology Is Society Made Durable.”
The Sociological Review 38, no. S1 (May 1, 1990): 103–31.



Technology and society

Technology *mediates* the way we live and interact in society:



Weapons

Interpersonal dominance
Warfare, conquest, colonialism



Transportation

Trade
Migration



Medicine

Personal health
Reproduction
Demographic change



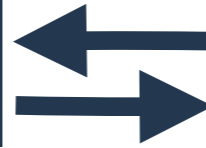
Automation

Increased alienation
Economic production

Communication ...

Science & Technology studies

Society & culture



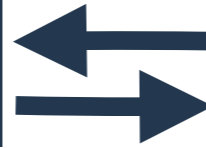
Science & technology

How does
technology
affect
society?

- Is technological change *exogenous*? something that happens *to* society?
Demographic transition theory, Weber on bureaucracy, etc.
- How can new science and technologies change the way we interact?
- How can new science and technologies alter power relations?

Science & Technology studies

Society & culture



Science & technology

How does
society
affect
technology?

- Production of scientific knowledge and technology is ***inherently social***.
- Social institutions and norms ***shape*** scientific knowledge.
Promote 'bad' science (phrenology, conversion therapy)
Hinder 'good' science (heliocentric astronomy, stem cells)
- Scientific knowledge is ***itself social***.
Kuhn: paradigms and structure of scientific revolutions
Latour: creation of a scientific fact

Internet as Equalizer

Communication technology

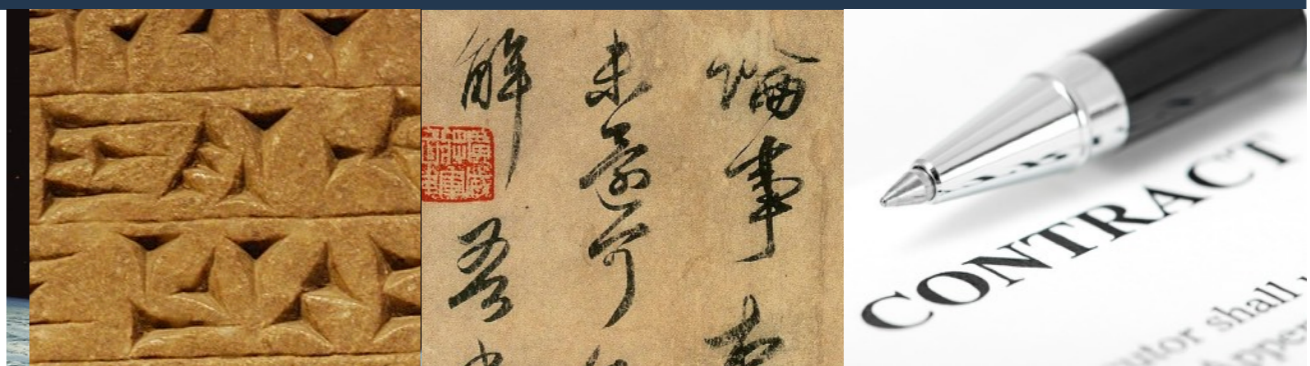
Technologies of communication are hugely impactful on society

Communication as the *medium* of interaction

Written language

Durable, verifiable, recordable

Trade, laws, long-distance communication, literature, ...



Printing

Reproducible, mass distribution

Democratization of text (Martin Luther)
Walter Benjamin: "The Work of Art in the Age of Mechanical Reproduction"



Communication technology

Technologies of communication are hugely impactful on society

Communication as the *medium* of interaction

Telecommunications

“Instant” broadcasts

Global availability of news
Mass media and culture (Hollywood)



The Internet

Email, World Wide Web

Person-to-person communication
Online identities



Internet as equalizer

Globalized communication

- Popular idea that instant, effortless communication is widely available to everyone
(We will problematize this in a moment)

Lowered barriers

- Common idea behind theories of modernization
- Geographic, political, cultural, and economic barriers are easier to cross

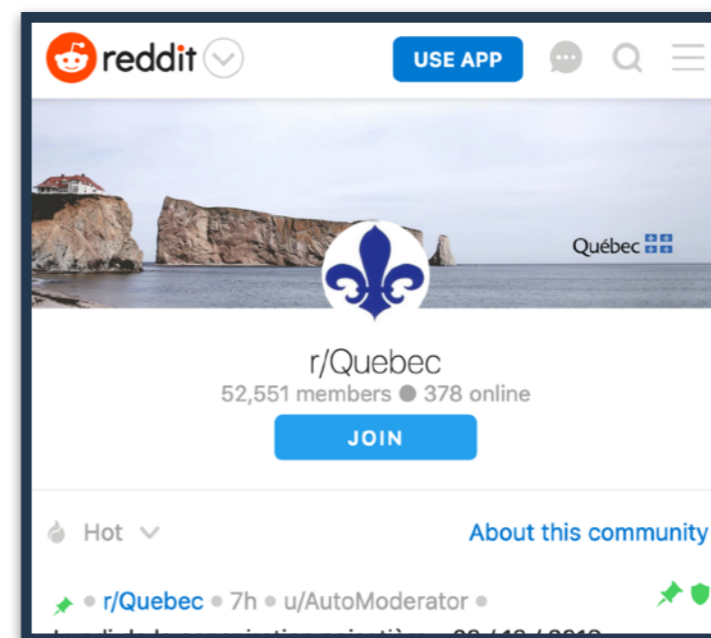
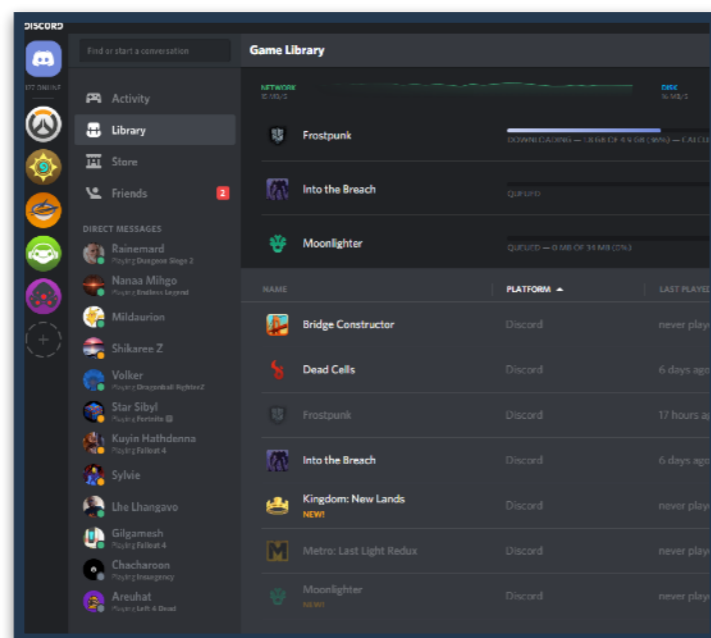
“The World is Flat”

- Thomas Friedman (2005)
- Utopian ideal of hyper-modernized globe
- Realization of free-market ideal

Internet as equalizer

Internet undoubtedly breaks down some social barriers

- Effort required to publish information to a global audience (or a specific person) is extremely low
- Special-interest information and support communities are widely accessible
Marginalized communities can cast a wider social support net
- Populations with grievance can find each other
Disparate individuals can become a “group”



Internet and mobilization

Recombinative culture

- *Cognitive Surplus* (Clay Shirky, 2010)
- Grass-roots creative communities
itch.io, bandcamp.com, github.com, archiveofourown.org



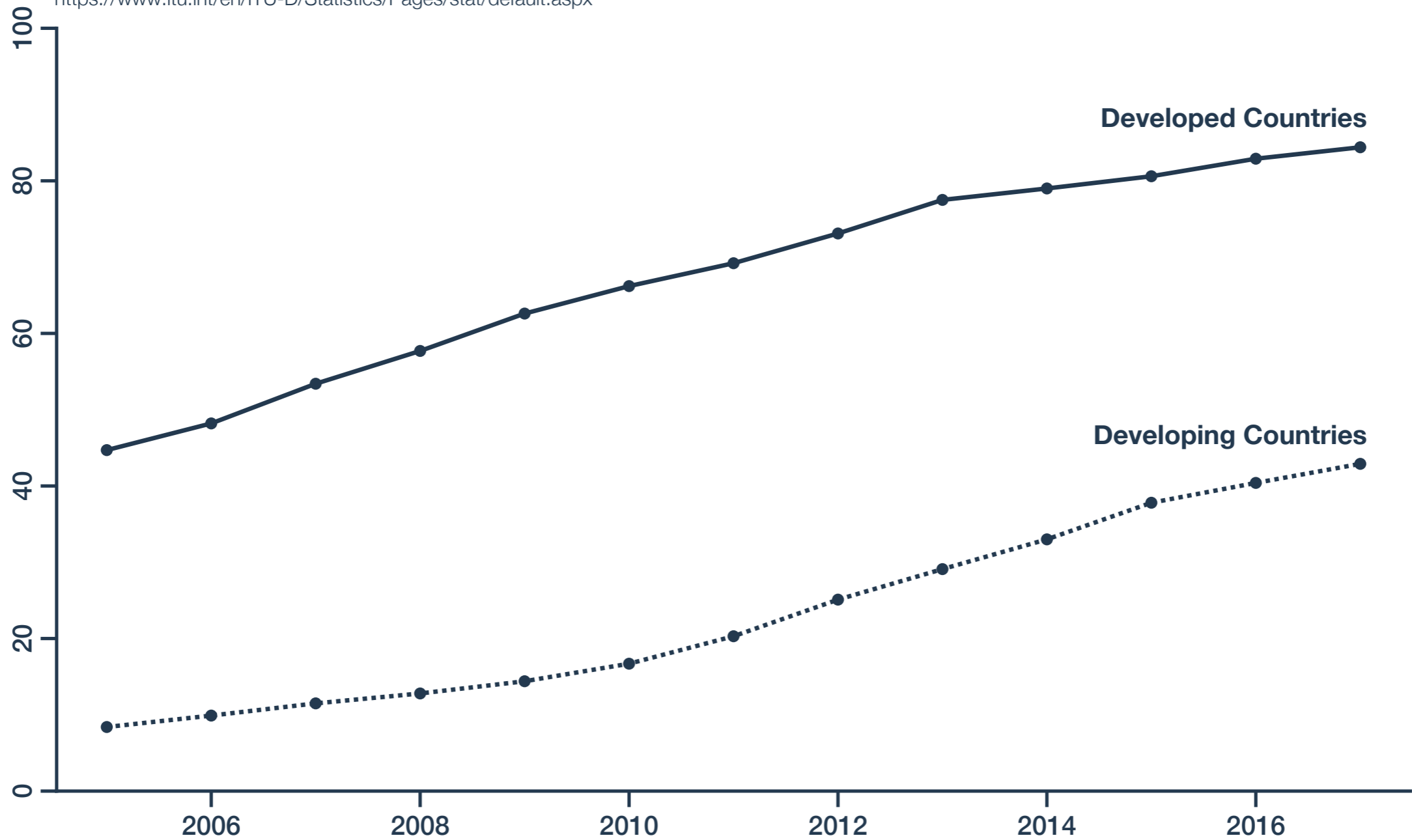
Internet as Divider

Digital divide

Percentage of households with Internet Access

Source: International Telecommunication Union

<https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>



Digital divide



```
<!DOCTYPE html>
<html>
  <head>
    <title>Cultural Privilege of Northwest Europeans</title>
  </head>
  <body>
    <section>
      <h1>Cultural Privilege of Northwest Europeans</h1>
      <p><em>Northwest Europeans</em> are often seen as having cultura
      <p>This privilege can be seen in various aspects of society, suc
      <p>Furthermore, the media often portrays Western values and life
```



Infrastructure inequality

- ⋮ Physical infrastructure of the Internet focussed on wealthy parts of wealthy countries
Access and bandwidth correlated with wealth and power
- ⋮ Hardware expensive for individuals and institutions

Cultural inequality

- ⋮ Internet is designed by and for Western Europeans and North Americans
Euro-centric URLs, programming languages, documentation, ...

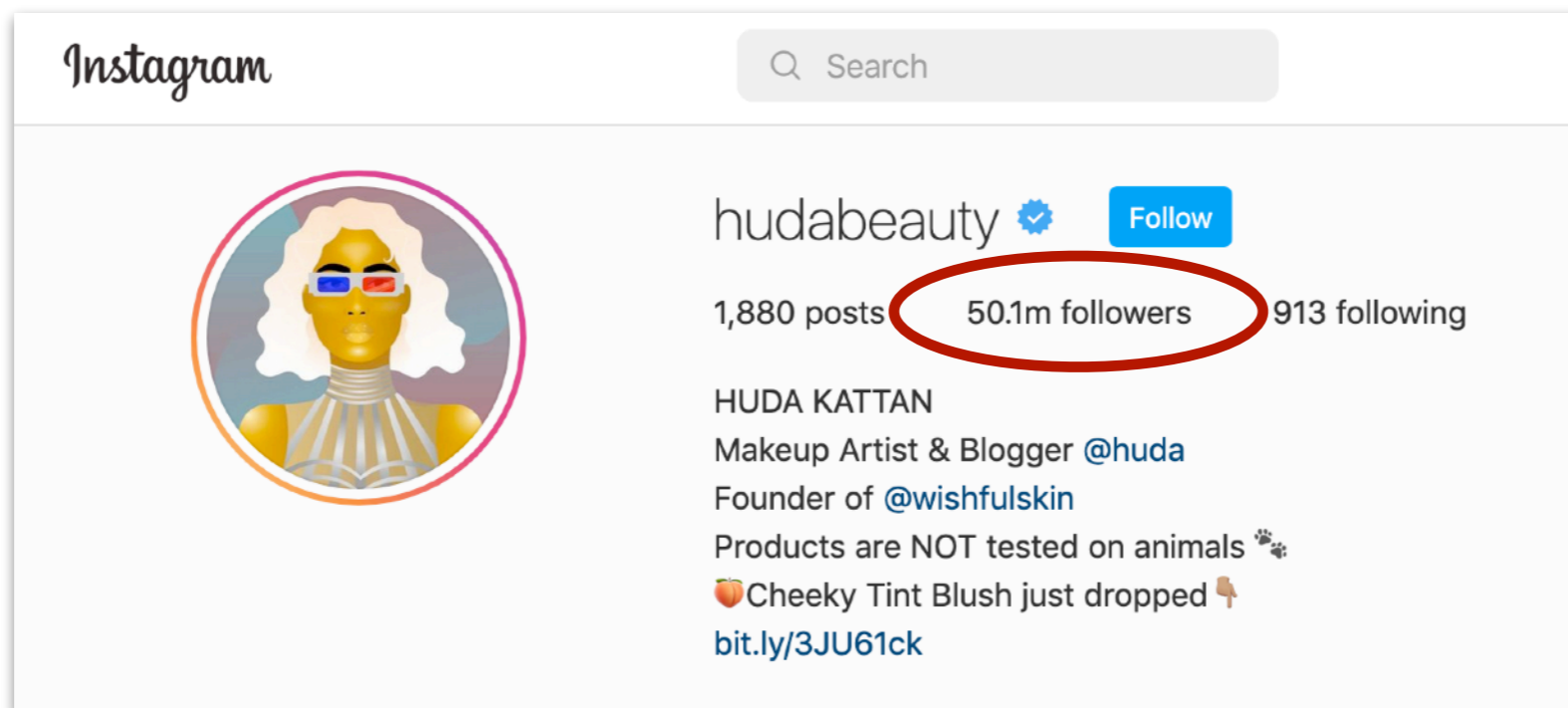
Knowledge inequality

- ⋮ Technical knowledge
Email, web navigation, word processing, etc.
- ⋮ Social knowledge
Etiquette, discernment of legitimate sources, etc.

Structural inequality

Forces of structural inequality

- Even a “flat world” will develop structural inequalities
- Matthew effect
(path dependency, preferential attachment)
“Rich get richer, poor get poorer”
- **Concentration of power**
Twitter accounts with many followers will attract even more
Amazon books with lots of reviews will sell more
Academic articles with lots of citations will be cited more
- ***Small differences compound over time***



Embedded inequality

Automation of communications media

- Filtered content, targeted ads, search, ...

Technology embeds existing biases

- Racial, ethnic, gender, and class prejudices are built into technology

Roth, Lorna. "Looking at Shirley, the Ultimate Norm: Colour Balance, Image Technologies, and Cognitive Equity." *Canadian Journal of Communication* 34, no. 1 (March 28, 2009).



Embedded inequality

New media and the reproduction of inequality

- Artificial intelligence / machine learning cannot be neutral
- Biases of scientists
Introduced through categories and implicit assumptions
- Biases of society
Introduced through data availability and model training




an American man and his car



an African man and his car

AI-generated images reflect cultural biases

Bianchi, Federico, Pratyusha Kalluri, Esin Durmus, Faisal Ladhak, Myra Cheng, Debora Nozza, Tatsunori Hashimoto, Dan Jurafsky, James Zou, and Aylin Caliskan. 2022. "Easily Accessible Text-to-Image Generation Amplifies Demographic Stereotypes at Large Scale." arXiv. <https://doi.org/10.48550/arXiv.2211.03759>.

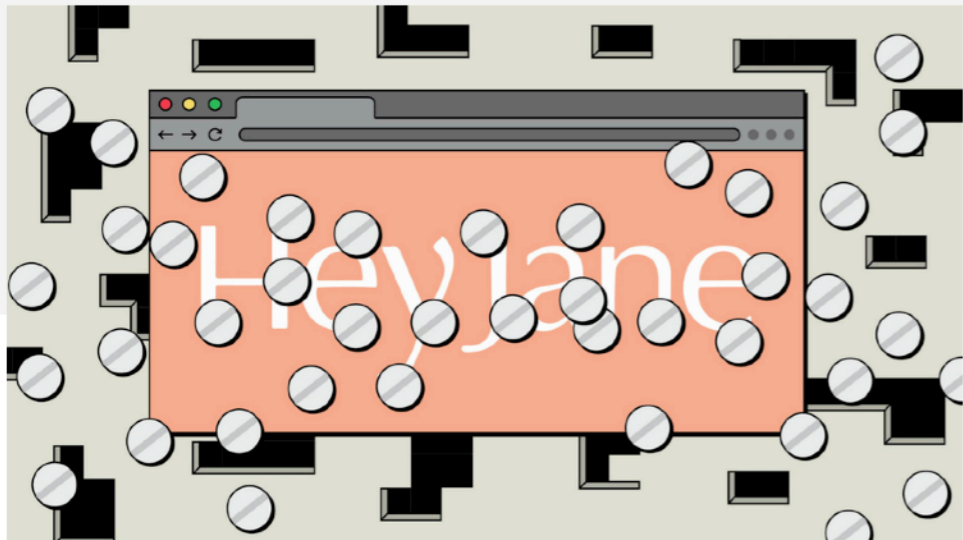
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Pixel Hunt

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Personal information from reviewers was also exposed until The Markup's inquiry
By [Jon Keegan](#) and [Dara Kerr](#)
July 1, 2022 10:00 ET



Gabriel Hongsdusit

Technology as tool of oppression

- Ubiquity of digital communication opens new channels for systems of oppression
- Surveillance
Location, content, association, etc
Foucault's panopticon
- Extraction
Labor (physical and creative)
- Harassment, cyber-bullying, doxxing
Availability of information and access to social networks