TECHNOLOGY & SOCIETY

LA 123: Socio-Cultural Perspectives on AI

Aalok Khandekar (aalok@la.iith.ac.in)

TECHNOLOGY & SOCIETY

- Technology at the heart of major transformations in human history

	Technological Revolutions	Social Revolutions
1st Industrial Revolution	Coal/ Steam + Clock Time	Centralization of labour, Capitalism
2nd Industrial Revolution	Oil + Assembly Line	Secularization, functional differentiation/ specialization
3rd Industrial Revolution	Silicon chips	Networks
4th Industrial Revolution	Automation	???

- What is the relationship between Technological Revolutions and Social Revolutions?
  - Is technology inevitable? Does society control technological development?

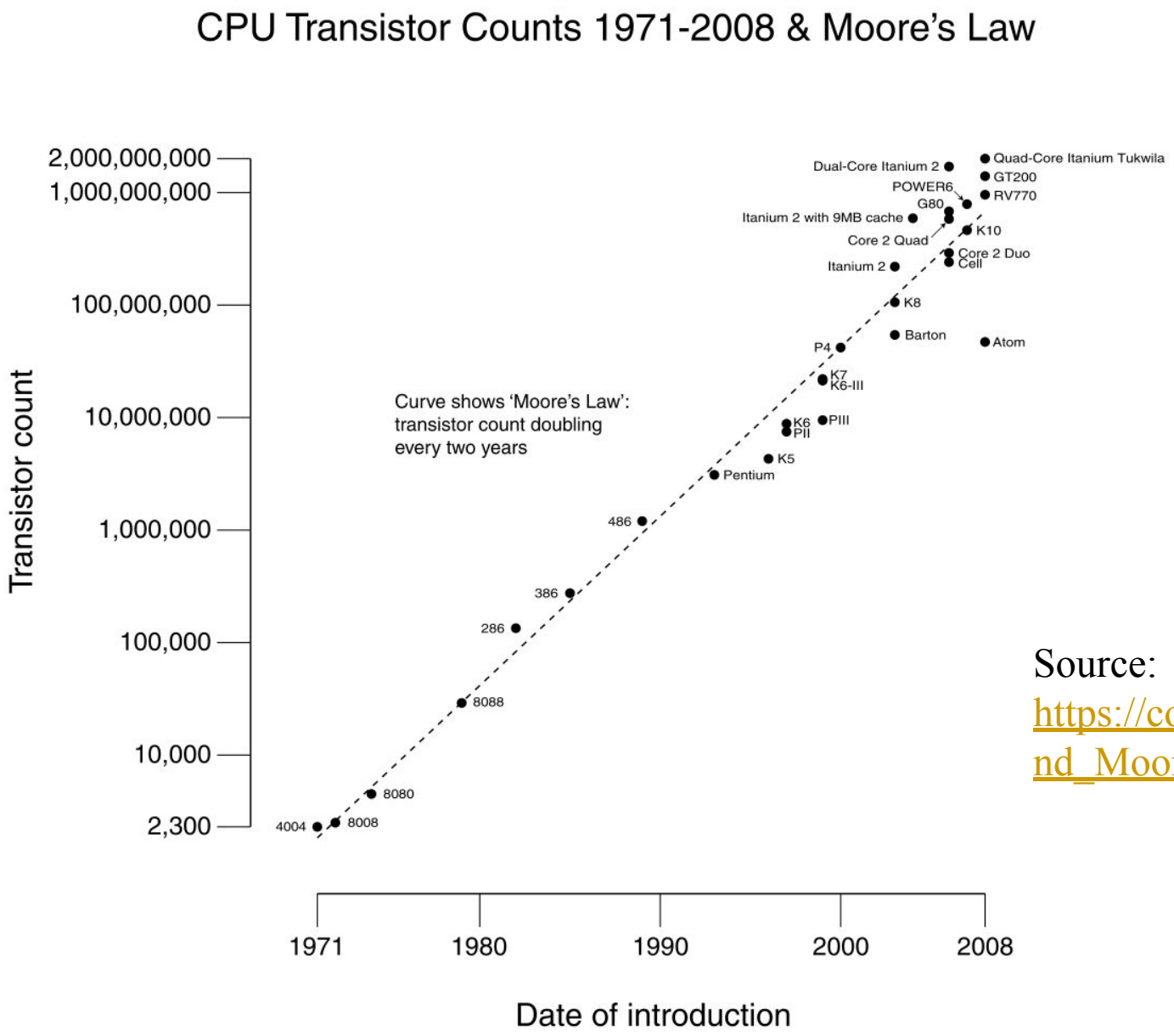
INEVITABILITY: TECHNOLOGICAL DETERMINISM

- Technological determinism is the idea that technology develops autonomously according to an internal logic.

- Further, it forces social structures to adopt to technology.

- As such, society has little to no control over technological development. Two versions of determinism:
  - "Soft" determinism: Technology is strongly compatible (but does not necessarily require) particular social structures
  - "Hard" determinism: Technology necessarily requires particular social structures

MOORE'S LAW

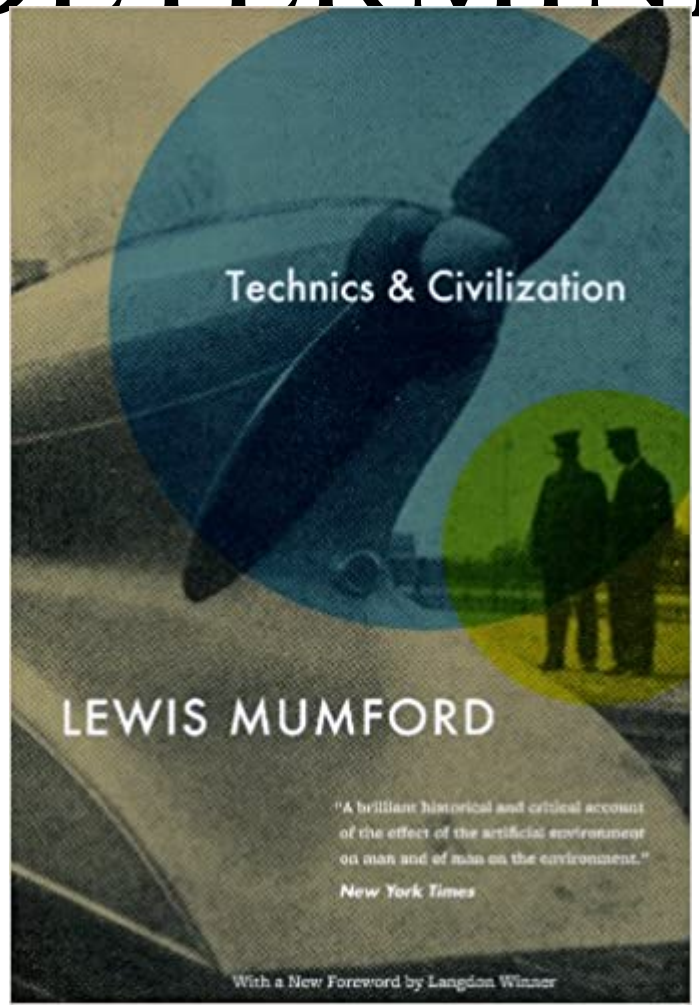


Source: https://commons.wikimedia.org/wiki/File:Transistor_Count_and_Moore%27s_Law_-_2008_1024.png

TECHNOLOGICAL DETERMINISM

- Long history of thinkers who have worried about out-of-control technology and values of efficiency and productivity replacing concerns of societal welfare, human dignity, and quality of life.

- E.g. Jacques Ellul, Lewis Mumford, Martin Heidegger, Langdon Winner



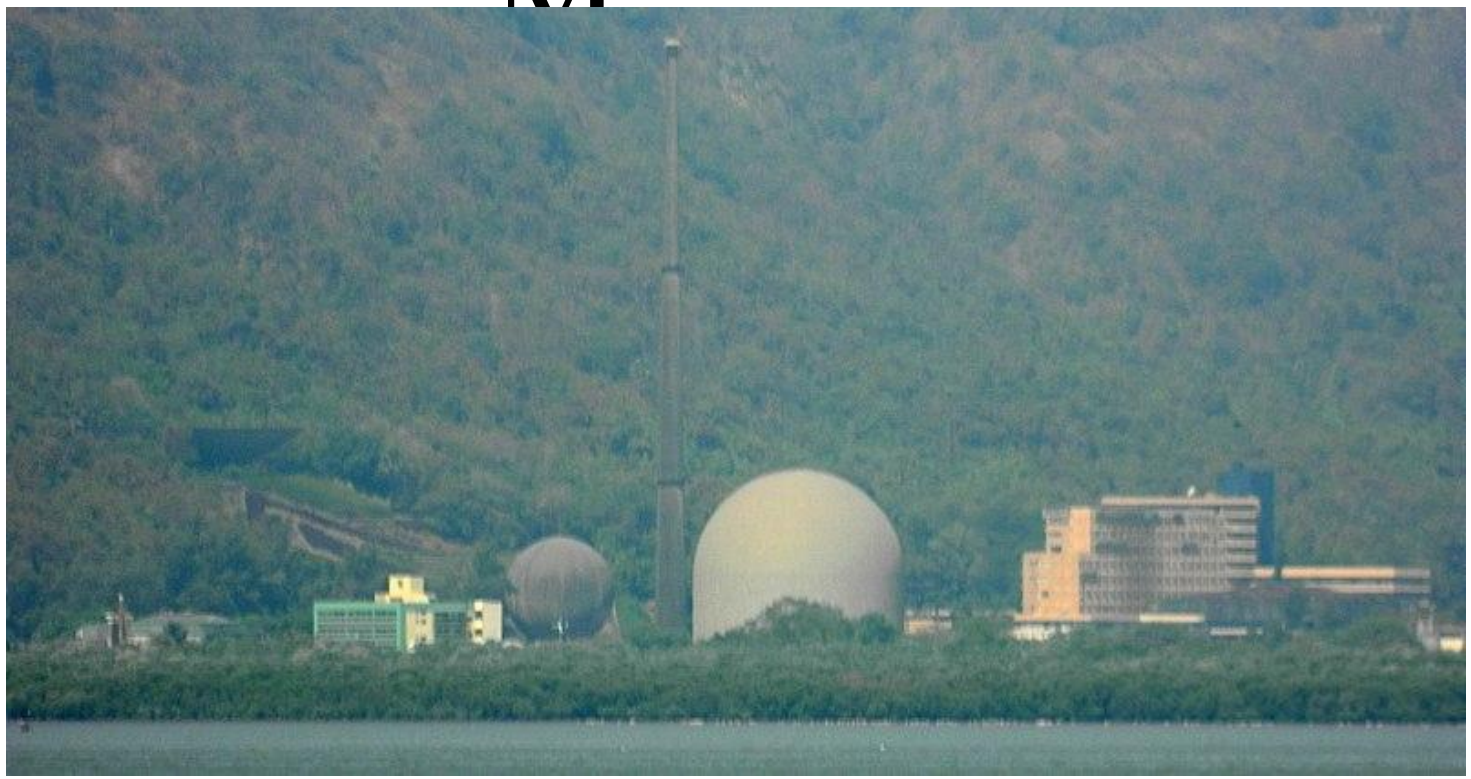
SOFT DETERMINISM

- Technologies as forms of social order. Suggest strong compatibility with certain kinds of social organization rather than others.
- E.g. Built environment often assumes physical able-ness
- Assumptions about users etc. can be both deliberate or unintended

HARD DETERMINISM

- Some technologies necessarily require certain kind of social structures

- E.g. Nuclear capability necessarily requires a (partially) militarized society. Not as compatible with decentralized governance (as is solar energy, for example)



TECHNOLOGICAL DETERMINISM: CRITICISMS

- Only works if we take a macro-level perspective
  - Technological determinism doesn't explain micro-level practices,

- Fatalist: doesn't allow for for human/ societal agency in shaping developmental trajectories

SOCIAL CONSTRUCTIONISM

- The idea that technologies are shaped through negotiations between a variety of stakeholders
  - i.e. technology does not determine human action, but rather, human actions shapes technology
  - Not just in terms of aesthetic form but also its design through-and-through

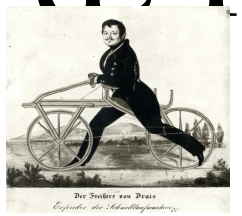
- If we look at technology in the making, we realize that at every point of its design, several pathways were available. Some pathways were chosen (for particular reasons that are specific to that context) while others were not.

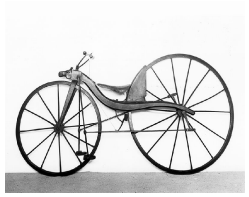
- So, the "best" technology doesn't emerge as the "winner," but rather what is "best" is a *product* of social negotiations that happened during the design of the technology.

- Eventually, technologies stabilize and choices made during its design come to be naturalized. Therefore, they seem to be inevitable.

- But, in principle, are always open to renegotiation and redesign

COMMON BICYCLE: TALE OF LOGICAL PROGRESS, OR SOCIAL PROCESS?





?

Bijker, Wiebe E. (1995). Of bicycles, bakelites, and bulbs: toward a theory of sociotechnical change. Cambridge, Massachusetts: MIT Press. ISBN 9780262023764.

does it work?

WOMEN DID WANT TO BICYCLE!

The “Ladies’ Ariel”

HOWEVER, IN PRACTICE …

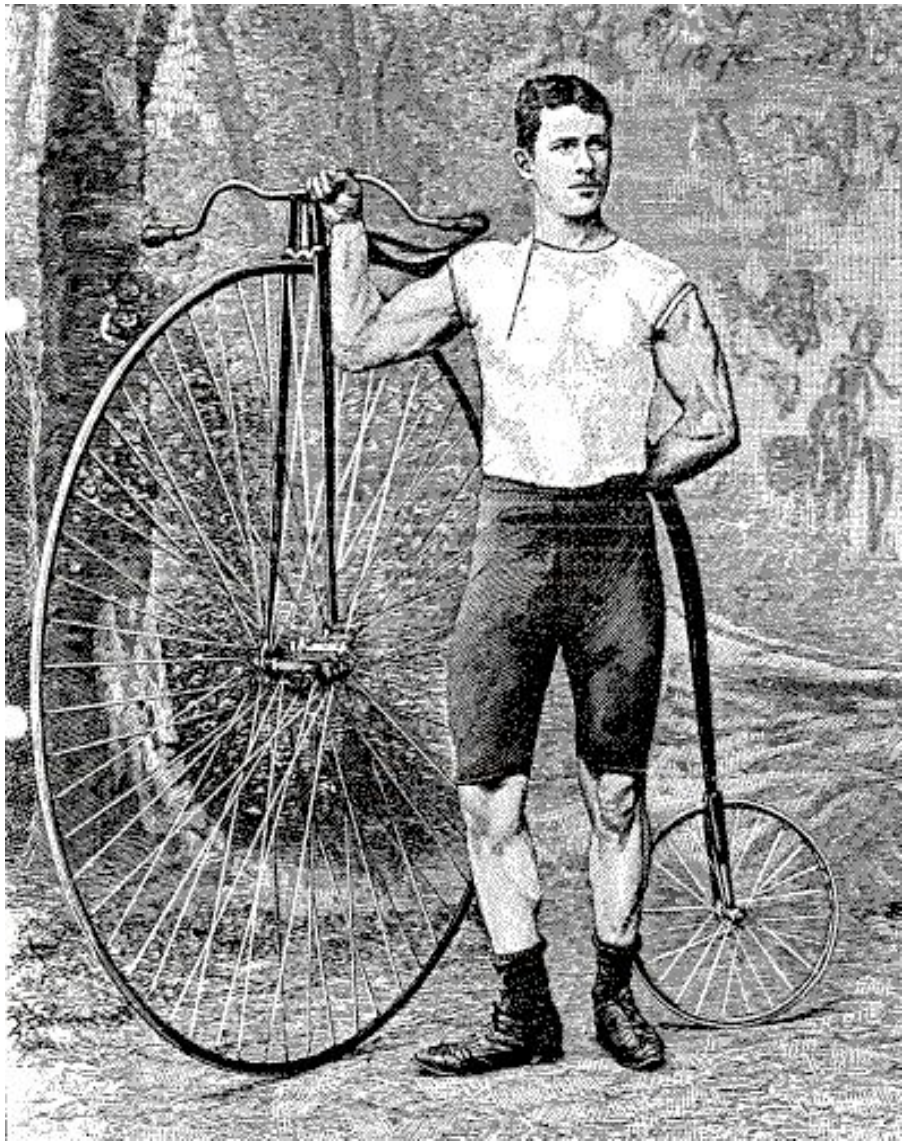
The Ordinary was a very unsafe machine

which did not work!

“YOUNG MEN OF MEANS AND NERVE”

The “Macho Bicycle”

which did work well!

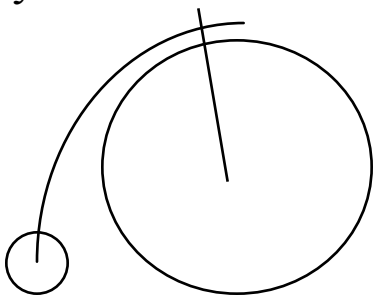


technology

women

Technological frame

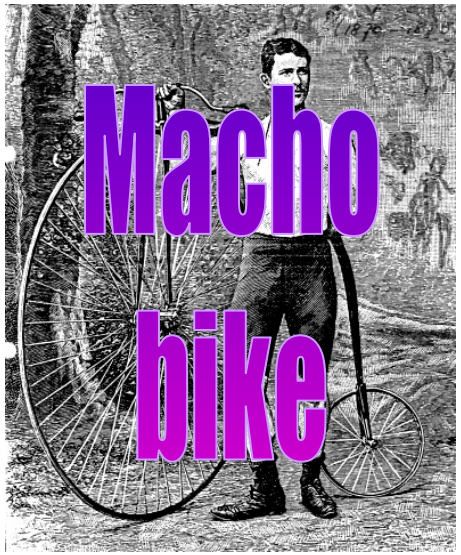
Ordinary



interpretative
flexibility

young
men

Technological frame



SOCIAL CONSTRUCTIONISM

- The idea that technologies are shaped through negotiations between a variety of stakeholders
  - i.e. technology does not determine human action, but rather, human actions shapes technology
  - Not just in terms of aesthetic form but also its design through-and-through

- If we look at technology in the making, we realize that at every point of its design, several pathways were available. Some pathways were chosen (for particular reasons that are specific to that context) while others were not.

- So, the "best" technology doesn't emerge as the "winner," but rather what is "best" is a *product* of social negotiations that happened during the design of the technology.

- Eventually, technologies stabilize and choices made during its design come to be naturalized. Therefore, they seem to be inevitable.

- But, in principle, are always open to renegotiation and redesign

TECHNOLOGY & SOCIETY

- What is the role of technology?
- Does technology have any agency or is at all about social processes?

Valencing

Forms of Life

HOW DOES TECHNOLOGY DEVELOP?

- Four theses about technology
  - Technology □□Society: Mutual Shaping
  - Technologies are **not** value neutral, can function ***as*** (*de facto*) law
  - Context matters
  - By far, the greatest degree of flexibility exists during the design phase.

AI & HUMANITY: IMPLICATIONS

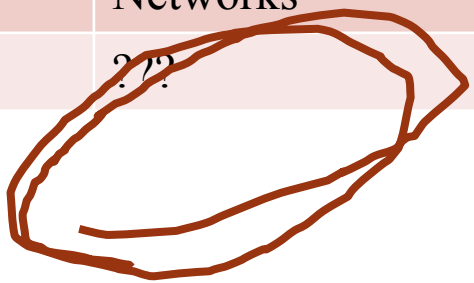
- AI Futures: Not inevitable, but open ended must be constructed
  - Much more flexibility in shaping how AI is incorporated into our societies

- Not value neutral The democratic imperative

- Not universal The methodological imperative: AI in context rather than in the abstract

SHAPING 4IR

	Technological Revolutions	Social Revolutions
1st Industrial Revolution	Coal/ Steam + Clock Time	Centralization of labour, Capitalism
2nd Industrial Revolution	Oil + Assembly Line	Secularization, functional differentiation/ specialization
3rd Industrial Revolution	Silicon chips	Networks
4th Industrial Revolution	Automation	???



AI & HUMANITY IMPLICATIONS

- Module 1: Post-Work Futures
  - What is the future of work and employment? What are the implications for labor? How can we offset some of the expected negative impacts of large-scale automation?

- Module 2: Privacy & Surveillance
  - In a world of big data, do we still have a right to privacy? What are the implications of pervasive surveillance for our societies? Who benefits and who experiences greater vulnerability?

- Module 3: Pyscho-social impacts of AI
  - What does it mean to be human in the world of AI? How are core ideas and experiences of being human being transformed in the age of AI?