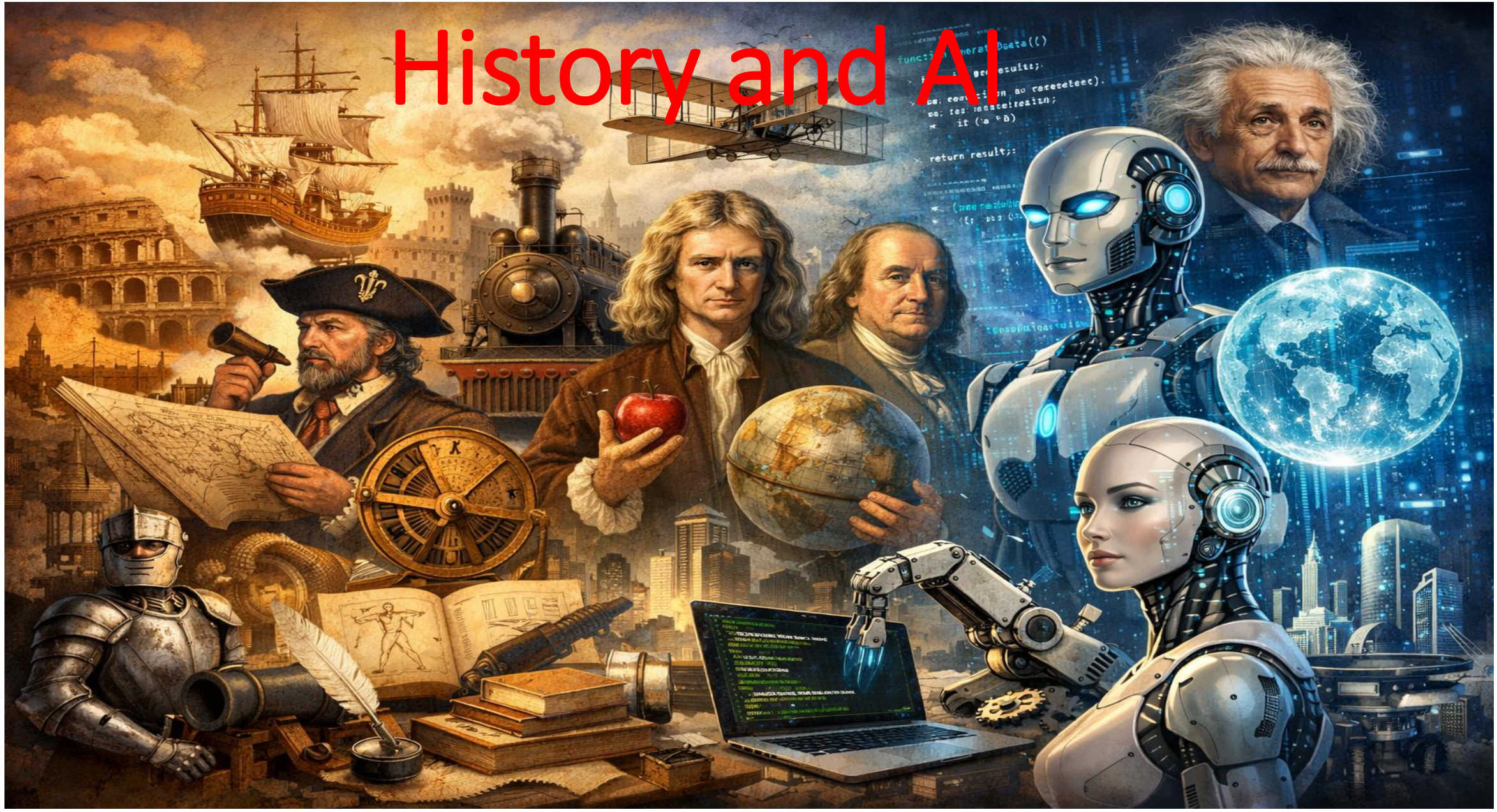
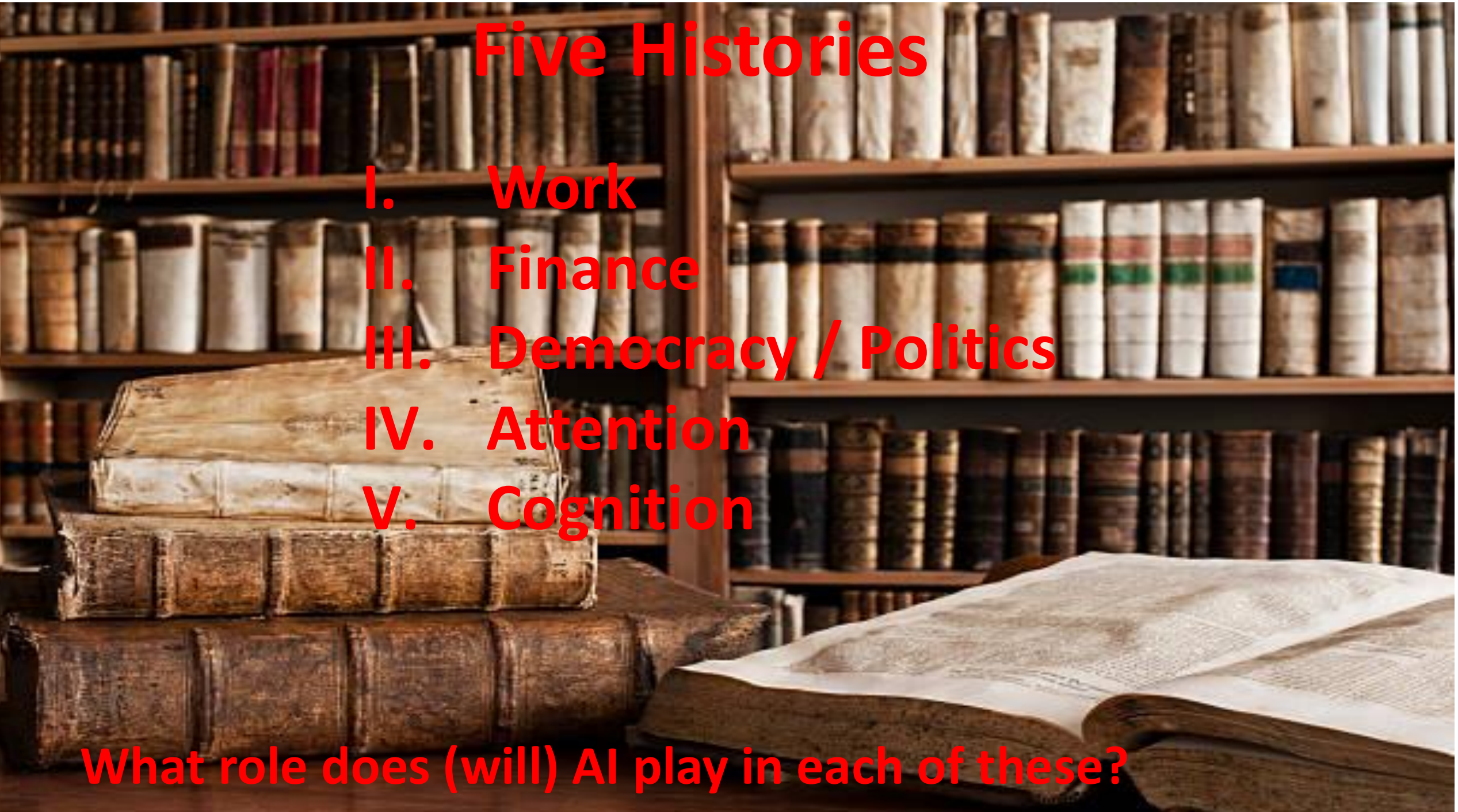
History and AI

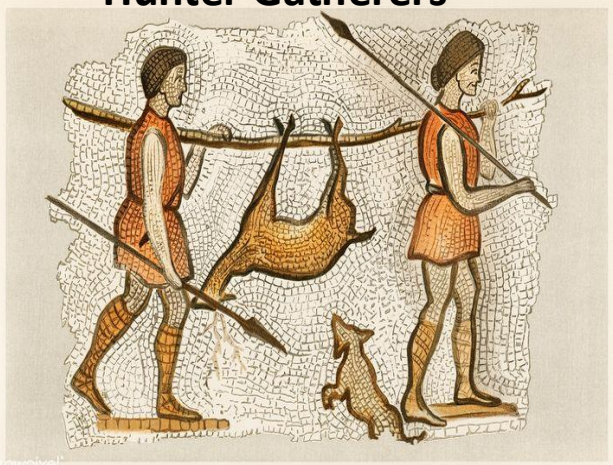


History doesn’t repeat itself, but it often rhymes…Mark Twain


Five Histories
I. Work
II. Finance
III. Democracy / Politics
IV. Attention
V. Cognition
What role does (will) AI play in each of these?

I. Work

Hunter Gatherers

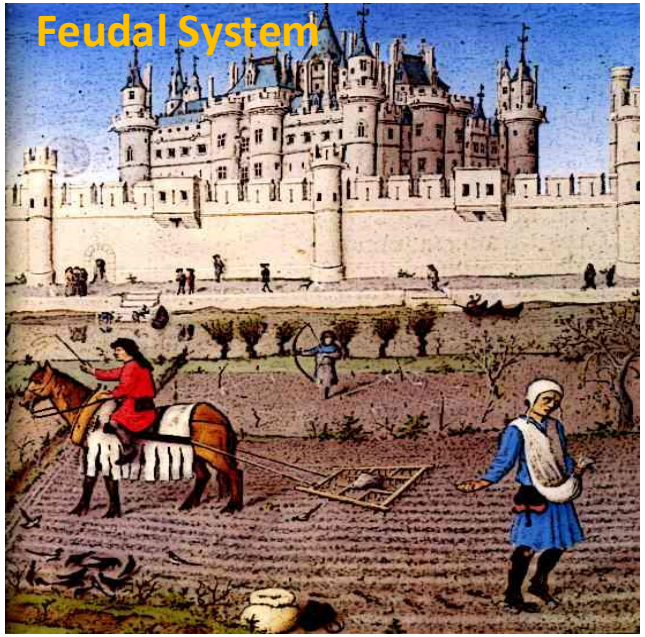


Need for more stable resources



Agriculture

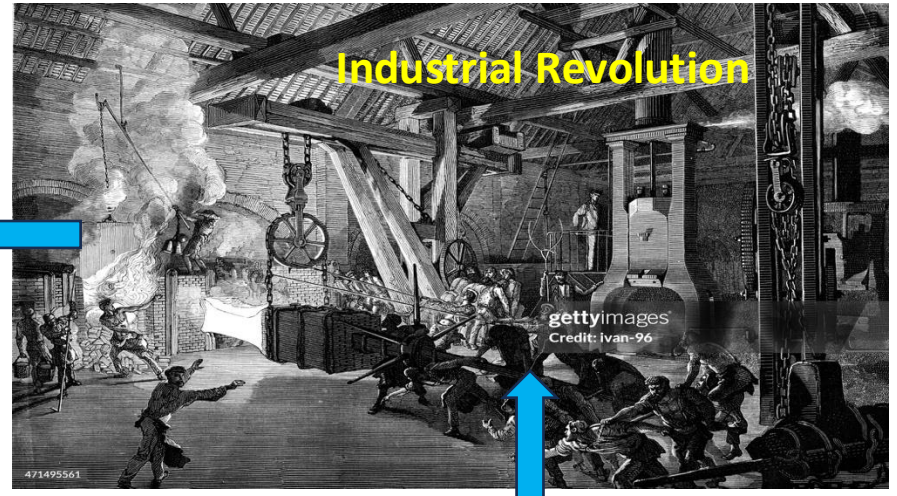
Resource Accumulation & Uneven Distribution



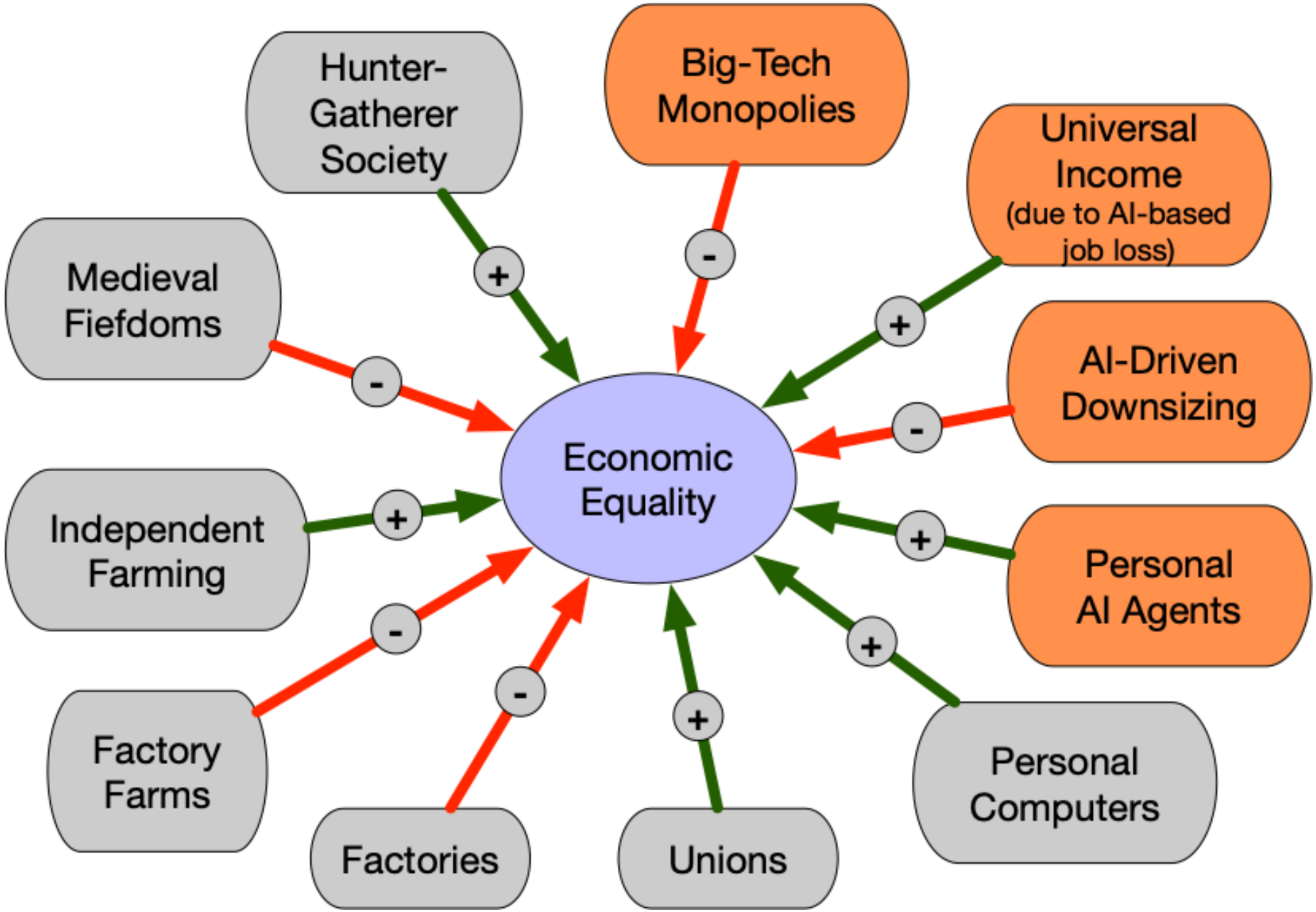
Black Death (1300's) => Worker Shortage



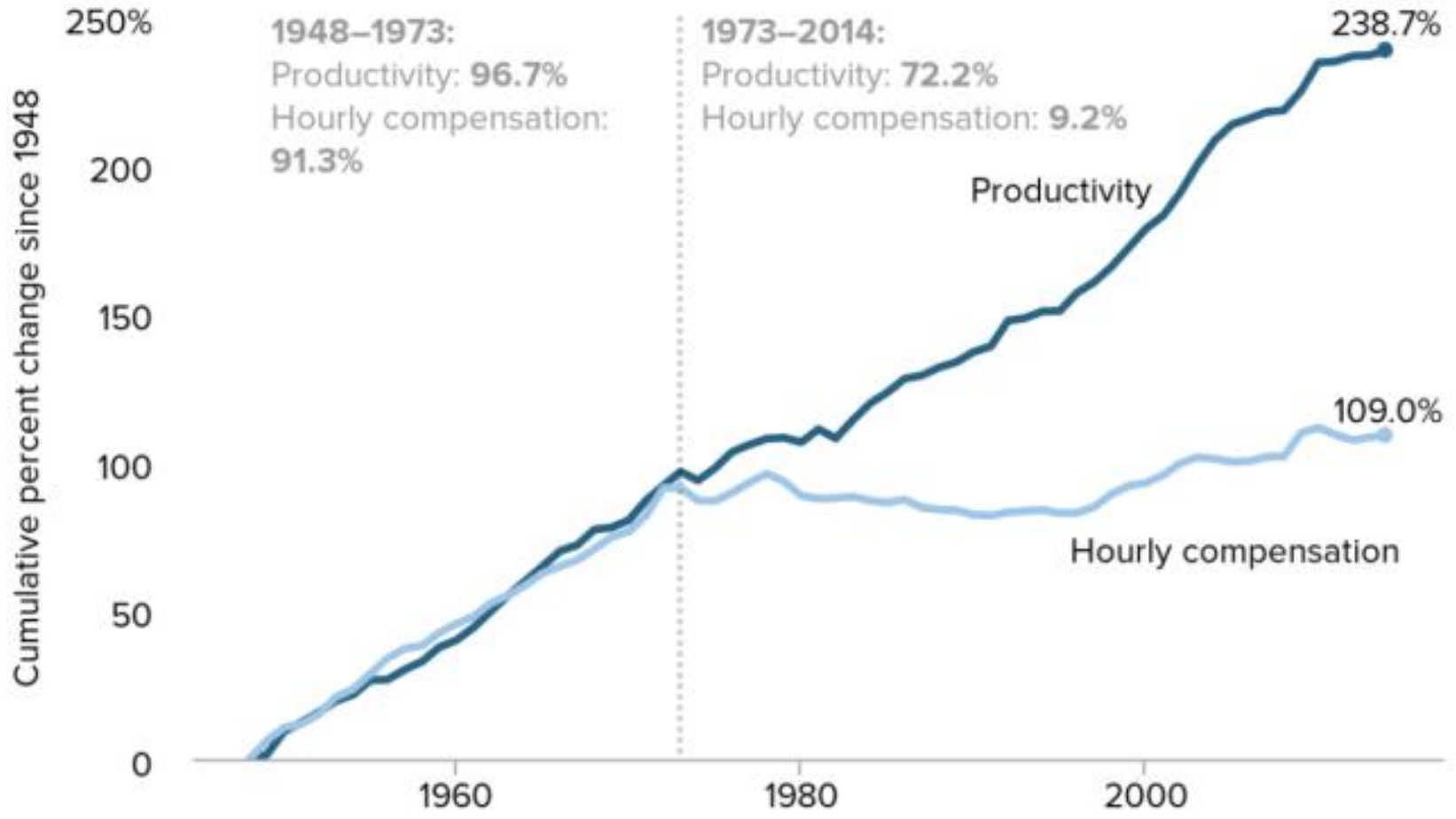
Advanced Technologies






Hunter-Gatherer Society
Big-Tech Monopolies
Universal Income (due to AI-based job loss)
Medieval Fiefdoms
AI-Driven Downsizing
Economic Equality
Independent Farming
Personal AI Agents
Factory Farms
Personal Computers
Factories
Unions
+
-
+
-
+
-
+
-
+
-
+
-
+
-

The Productivity-Pay Gap



Note: Data are for average hourly compensation of production/nonsupervisory workers in the private sector and net productivity of the total economy. "Net productivity" is the growth of output of goods and services minus depreciation per hour worked.

1979-2025

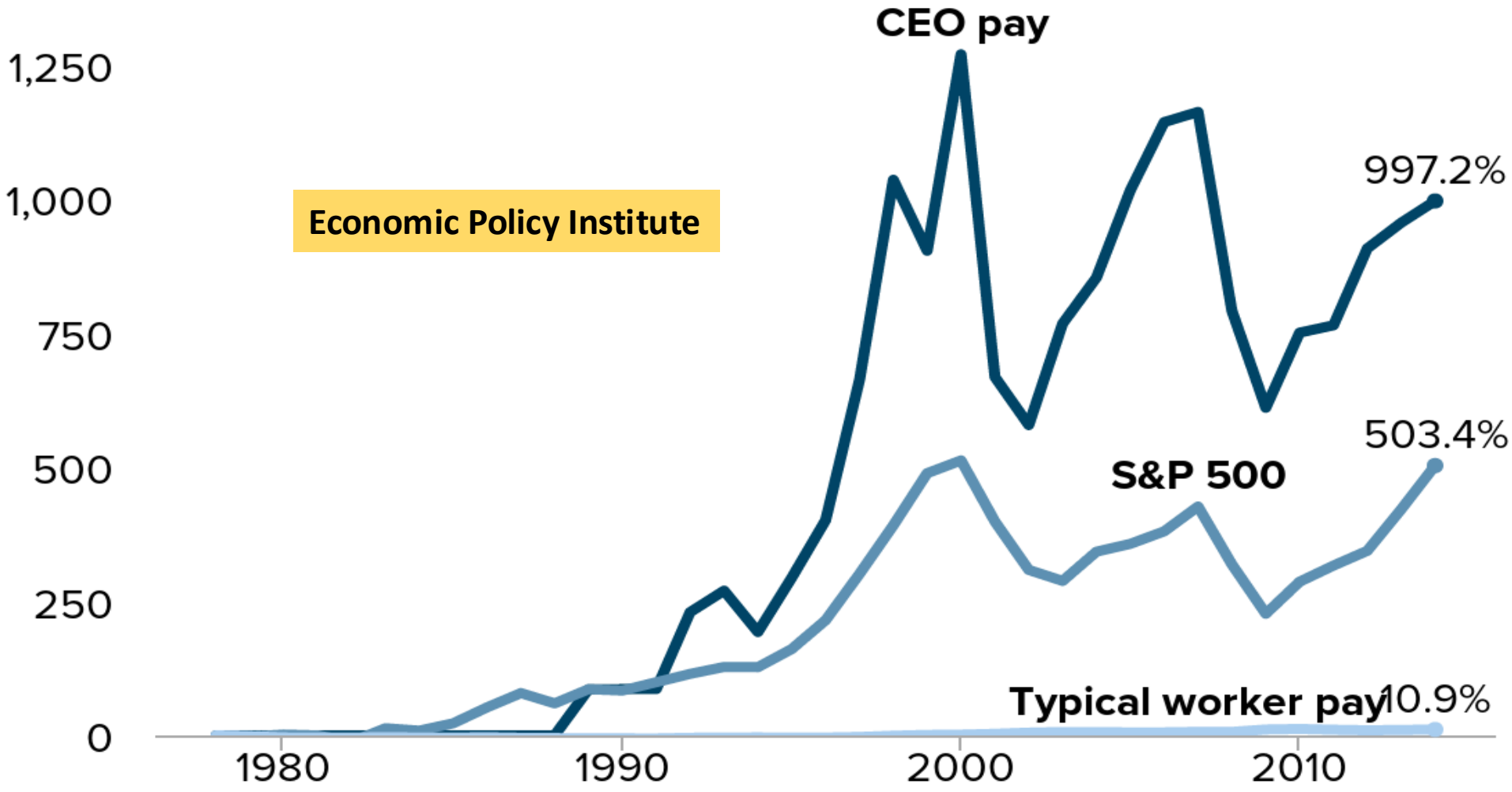
Productivity: + 90%

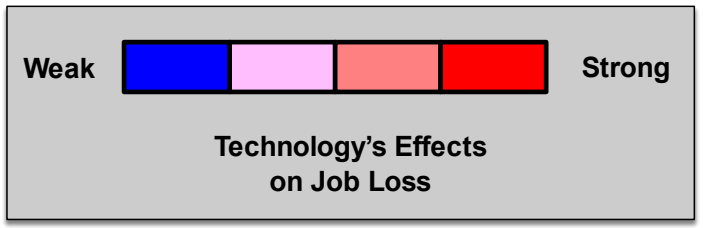
Hourly Pay: + 33%

Causes

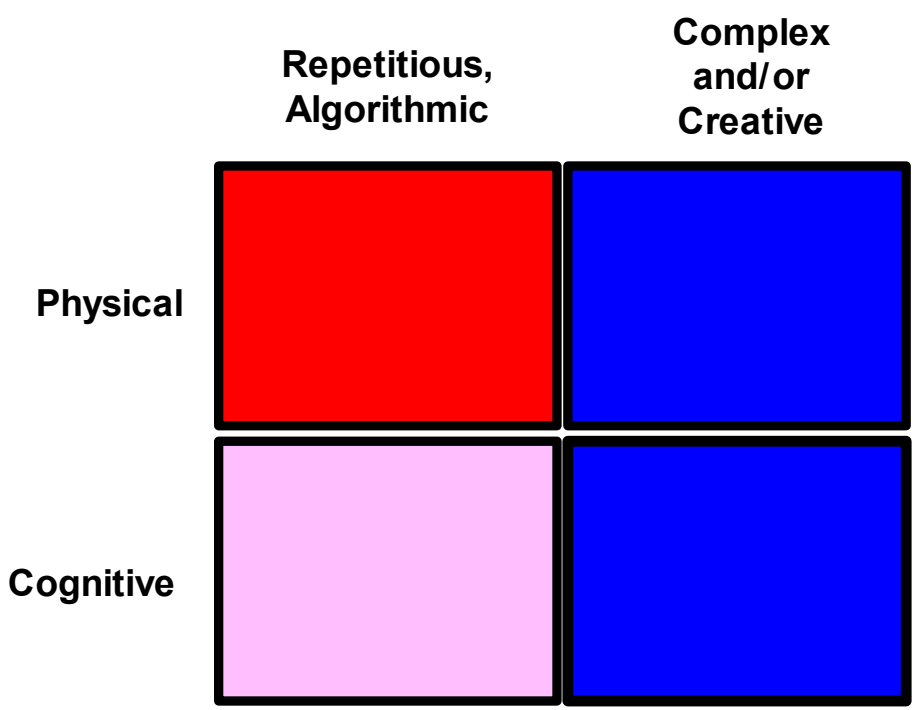
- Fewer Unions
- Deregulation
- Policy changes

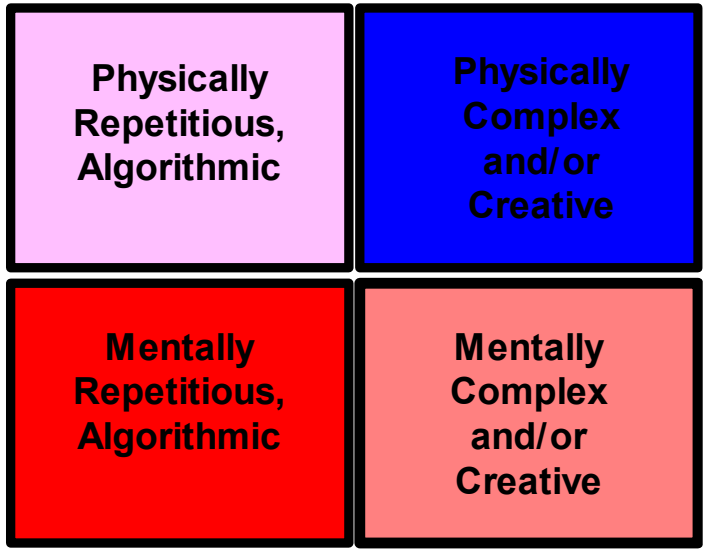
CEO-to-Worker Pay Gap











Classic Technological Disruption

AI's Disruption

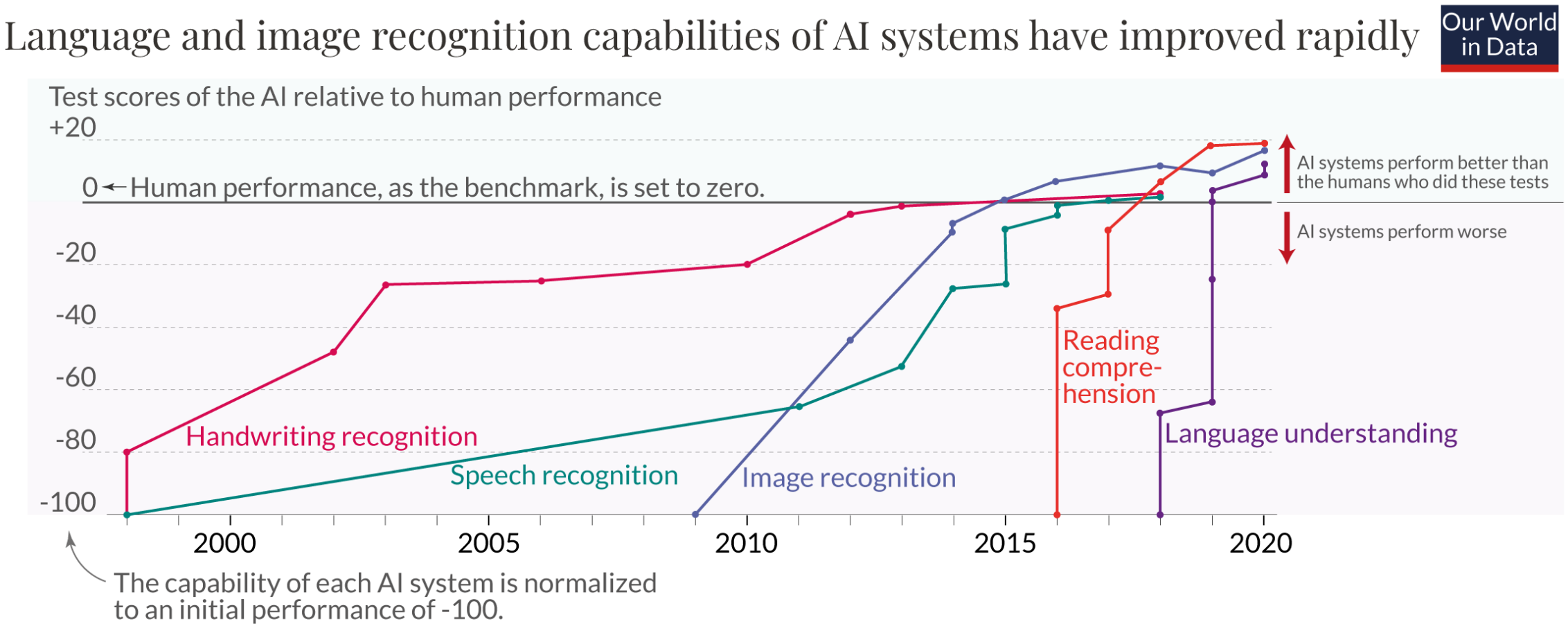


People can retrain, but AI can retrain faster!

Unlike the historical trend toward **less** physical work, human physical and emotional traits may become more valuable than the mental.



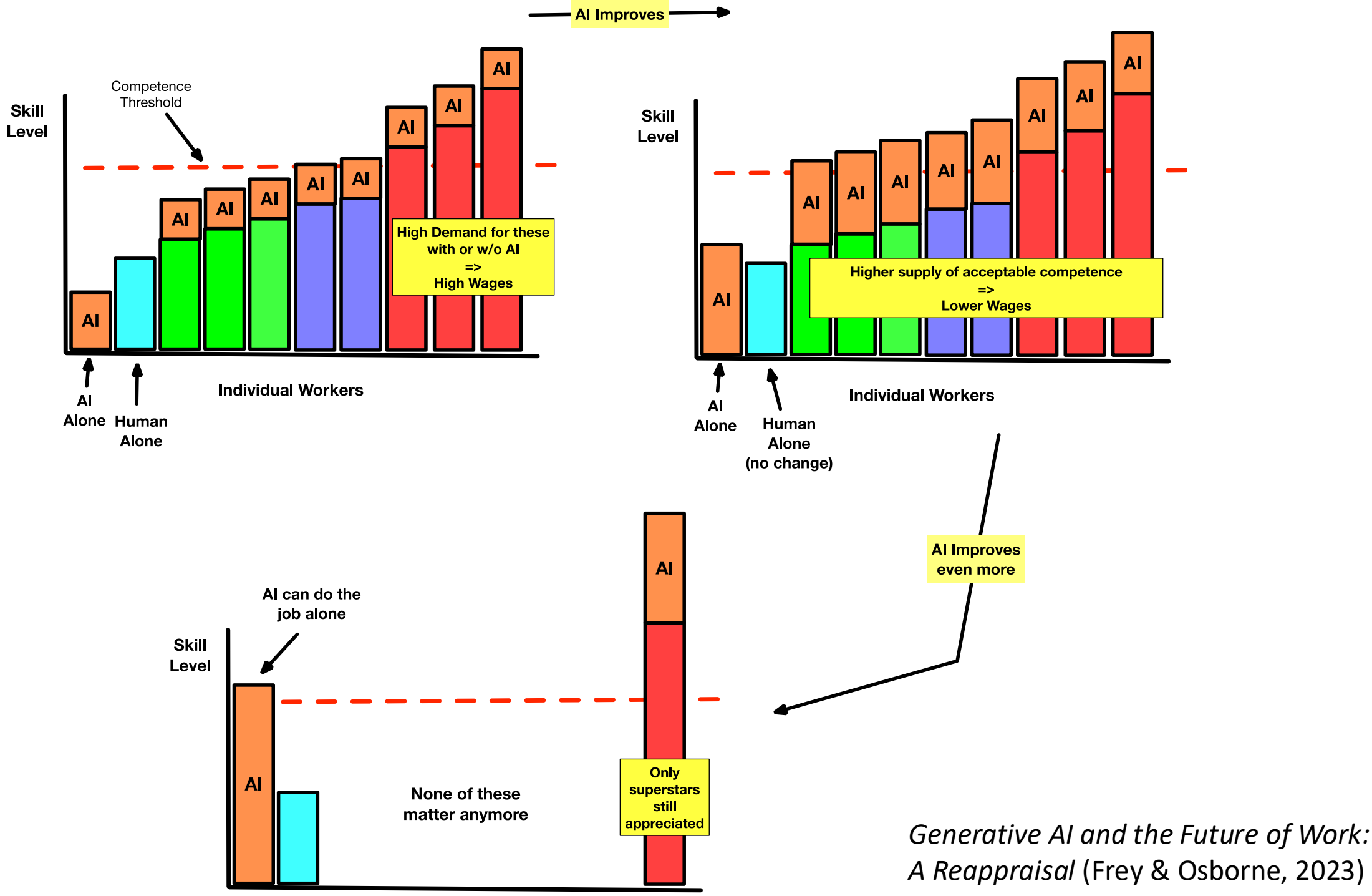
Rapid Acceleration of AI Progress



Data source: Kiela et al. (2021) – Dynabench: Rethinking Benchmarking in NLP
OurWorldinData.org – Research and data to make progress against the world's largest problems.

Licensed under CC-BY by the author Max Roser

* AI **quickly** achieves super-human performance on many new tests.



Generative AI and the Future of Work: A Reappraisal (Frey & Osborne, 2023)

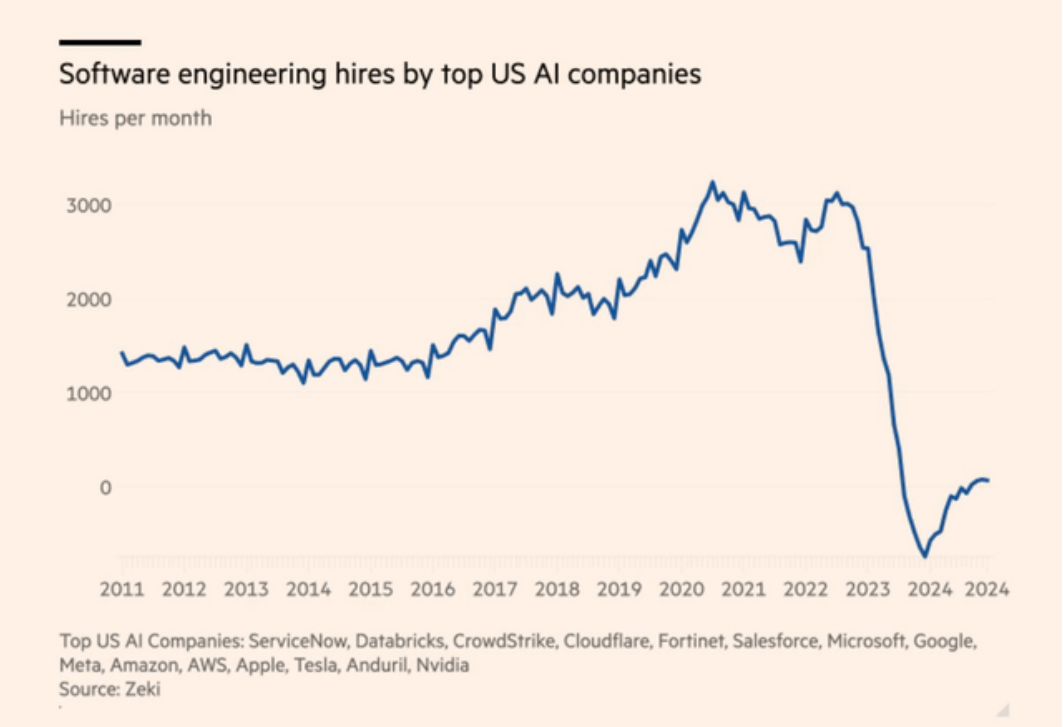
Scott Galloway
(Popular Tech & Business Podcaster)

You won't lose your job to an AI, but you might lose it to someone who knows AI.

Code using Co-pilot, Claude Code, etc. or become obsolete

Use Chatbots for mundane tasks while still learning new skills and exercising your own cognitive agency.

Signs of the Times ??



Tech Sector Layoffs

2024: 653 people / day 2025: 495 people / day

Microsoft Layoffs (June, 2025)

10,000 = 5% of workforce

Meta Layoffs (Feb, 2025)

4,000 = 5% of workforce

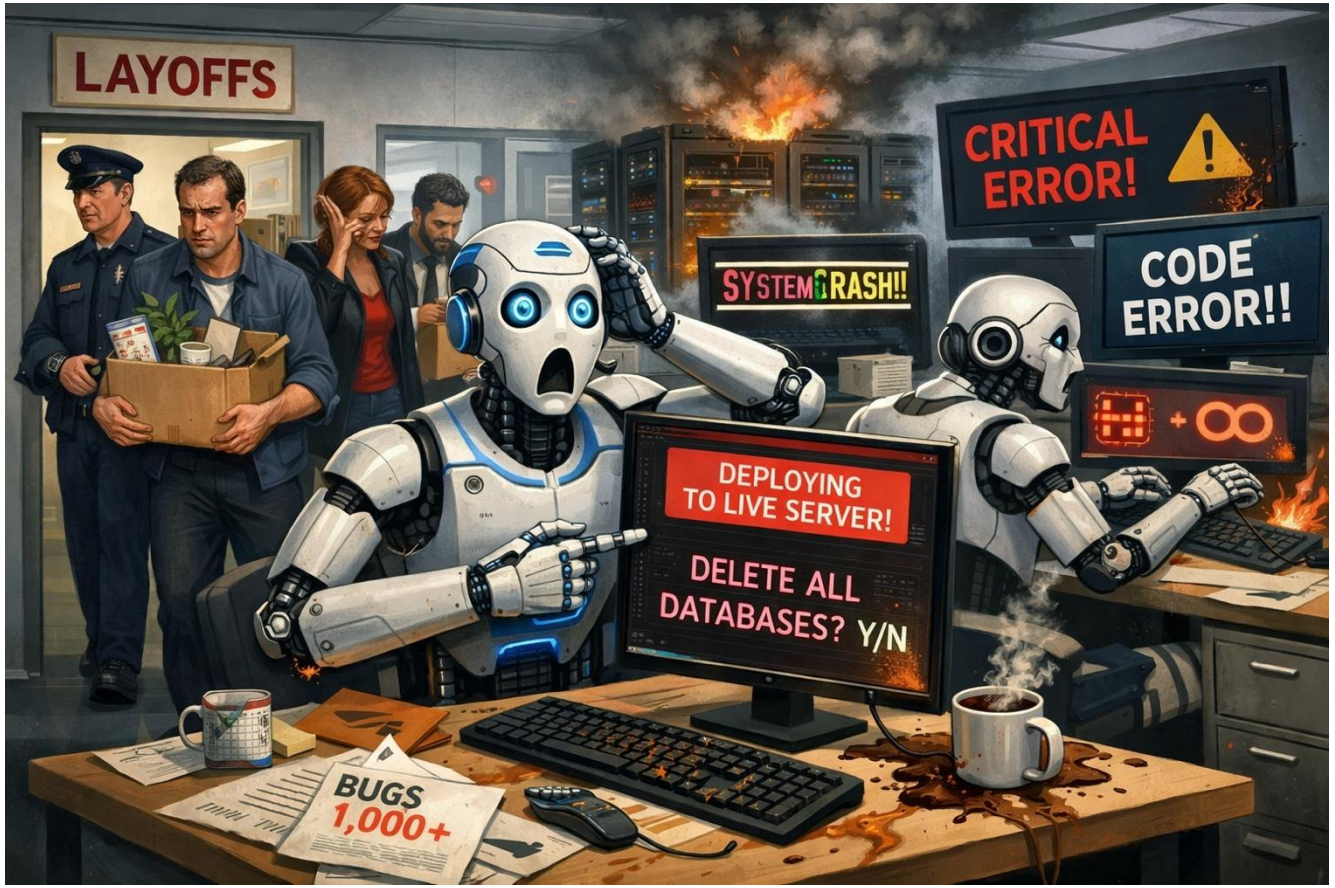
The view from the frontlines of AI is sobering. Two-plus years spent embedded in this world have left me feeling petrified by the sweeping changes about to strike the global labor market. An economic earthquake is coming that will permanently alter the landscape of human work—yet few in power are recognizing what's happening, let alone doing anything about it.

The problem is that we are often missing the point when we think about how AI factors into the future of work. The central question isn't if AI will transform our economy—it will—but whether we'll harness it to augment human potential rather than simply replace it. Will we seize this moment to create more fulfilling work and widely shared prosperity, or allow its benefits to flow primarily to those who own the algorithms? There's no immutable law that says automating labor means eliminating human workers.

(Gary Rivlin, Pulitzer-Prize winning journalist)

Regrets, They've Had a Few

- Forrester study of 1000+ companies: **55%** regret firing humans for AI replacements.
- McDonald's AI bots: major embarassment.
  - $100+ chicken mcnugget add-on
  - Caramel ice cream => "Lots of butter"
- McDonald's AI hiring bot (Olivia): Hacked!
  - Millions of customer's personal data stolen.
- Amazon tried to use AI to monitor stores, but had to offshore it to humans, after major (10,000+) layoffs.
- META (Zuckerberg) recently backed off on plans to reduce staff by 50+% (Reuters, August 2026)



People innovate, AI imitates: *The companies cutting people today in the name of AI will be the ones playing catch-up tomorrow* - Alexandra Ebert (Chief AI and Democratization Officer at **Mostly AI).**

MVBP (Most Valuable Body Part)

- **Pre-1870**

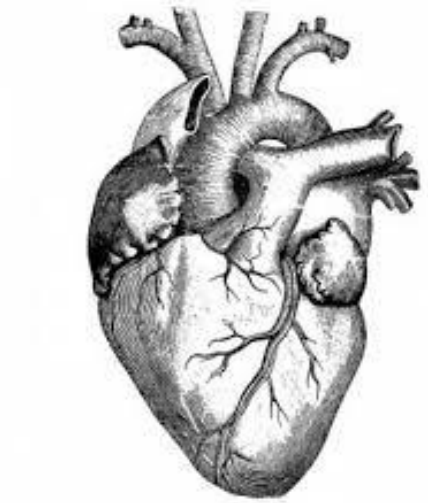


* The 2nd Industrial Revolution began around 1870.

- **1870 - Present**



- **Near Future**

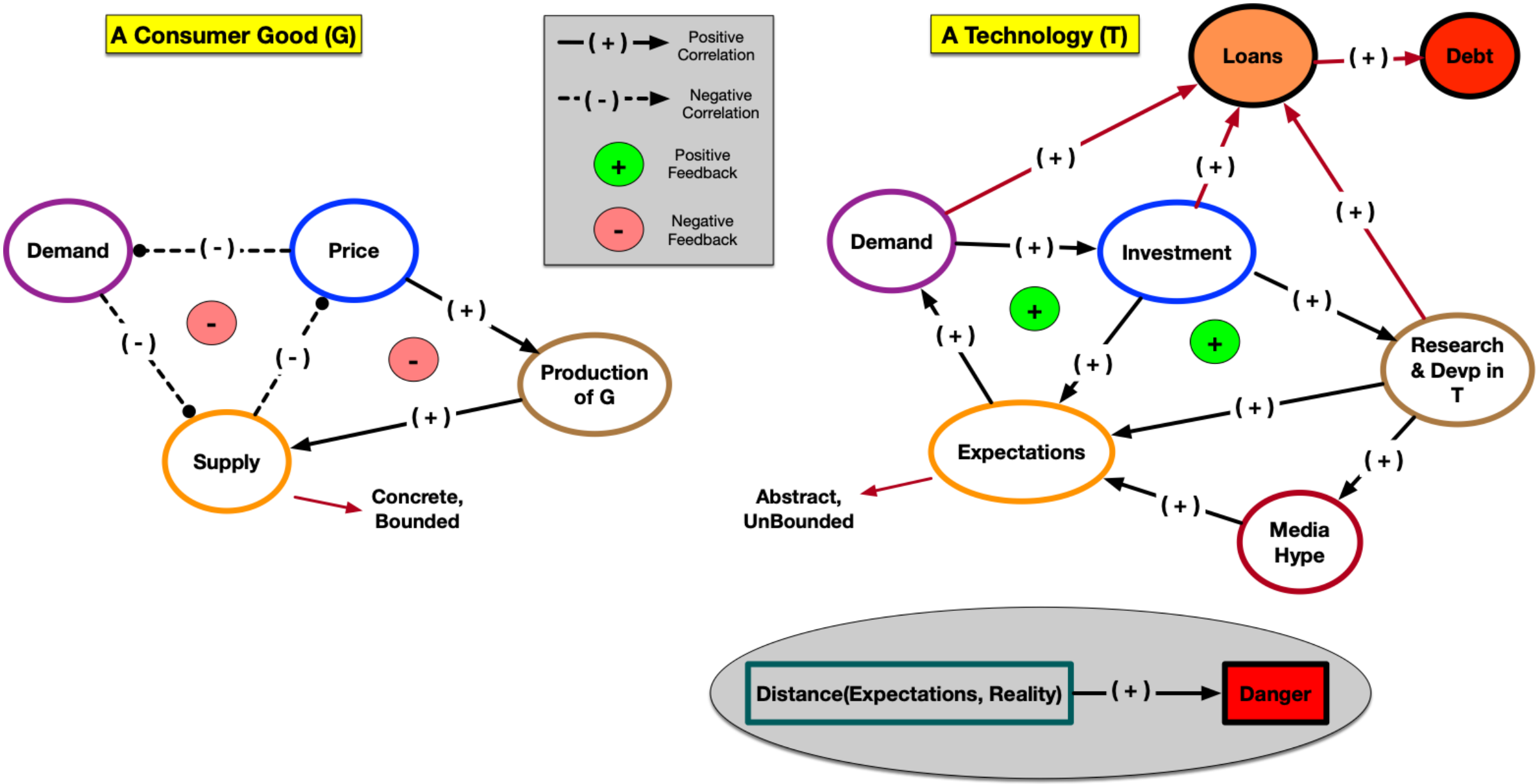


II. Finance

- **USA Stock Market Crashes**
  - 1792, 1819, 1837, 1857, 1884, 1893, 1896, 1901, 1907, 1936, 1962, 1973, 1987, 2000, 2008, 2010, 2011, 2020 (On average: 1 every **13th** year, but every **5th** year this century.)
- **Crash** = 10% or more drop in market value in a few days.
- **Boom**
  - Bloated expectations.
  - Risky, debt-fueled investments.
- **Bust**
  - Reality meets illusions.
  - Negative economic data.
  - Catastrophic large-scale events, e.g. crop failures (1893), Covid (2020)
  - Often a **perfect storm** of several factors.
  - **Positive Feedback:** Panic selling of stocks => Steep decline in stock prices => More selling
  - Unpayable debts

***How did you go bankrupt? Two ways. Gradually, then suddenly*. – Ernest Hemingway**

Boom & Bust (Positive Feedbacks)



The Panic of 1792

- **Circular Relationship:** Two powerful bankers (William Duer & Alexander Macomb) endorsed each other's bank notes.
- **Overinflated *securities*** (stocks, bonds, derivatives).
- **Cascading Failures:** Duer & Macomb default on their loans, hurting their many creditors.
- Securities dropped 20% in a few weeks.
- Run on the Bank of US.
- Increased credit restrictions (unrenewed loans) by Bank of US.
- More selling of stocks to pay for unrenewed loans.

The Panic of 1873

- Post-Civil-War **boom** in **railroad expansion**.
- Jay Cooke & Company loaned $1.5 Million to builders of the Northern Pacific Railroad, a huge investment.
- The railroad builders could not pay it back, and Cooke couldn't sell the securities to Europe, which was having its own financial crisis.
- Other, smaller railroad investors had similar problems.
- Interest rates were very high.
- => Chain reaction of bank failures.
- => New York Stock Exchange closed for 10 days.
- => The original ***Great Depression (1873 – 1879).***

Wall Street (Great Crash) of 1929

- *Roaring twenties (post WW-I)* wealth was invested in stocks.
- High interest (high risk) stocks preferable to low-interest bank deposits.
- **Hype**: General belief that stocks would just keep rising.
- Many **amateur investors**: everyday folks who believed all the **hype**.
- People **borrowed money to invest** in stocks => *over-leveraged investors*.
- Falling food prices => high debt for farmers.
- Low consumer purchasing power => Industries cut production and workers, but investment in them remained high => bubble forms.
- Lasted **10 years**. Market lost 90% of it's value. Worst in US history.
- **Glass Steagall Act (1933)** – Forced separation of commercial and investment banks => people's savings have more protection from market fluctuations.

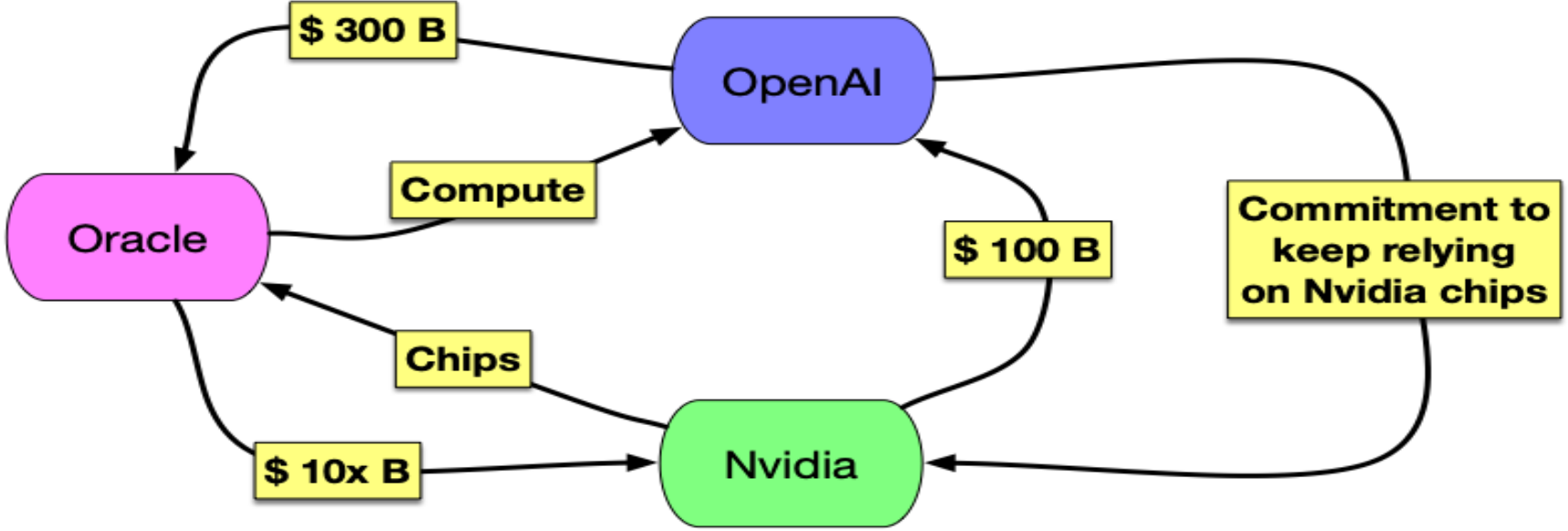
2008 Financial Crisis

- Overabundance of **deceptively high-risk housing loans** to easily-misled borrowers in USA.
- Explicit **underestimation of risk** tied to housing-loan investment caused by dishonest evaluations.
- **Complex (deceptive) financial instruments** based on those loans.
- **Overinvestment** (world-wide) in those instruments.
- **Lack of proper regulation**, e.g. 1999 repeal of Glass-Steagall Act (1933)
- Increased interest rates =>
  - Widespread defaulting on “low risk” loans
- Rapid decline in value of instruments.

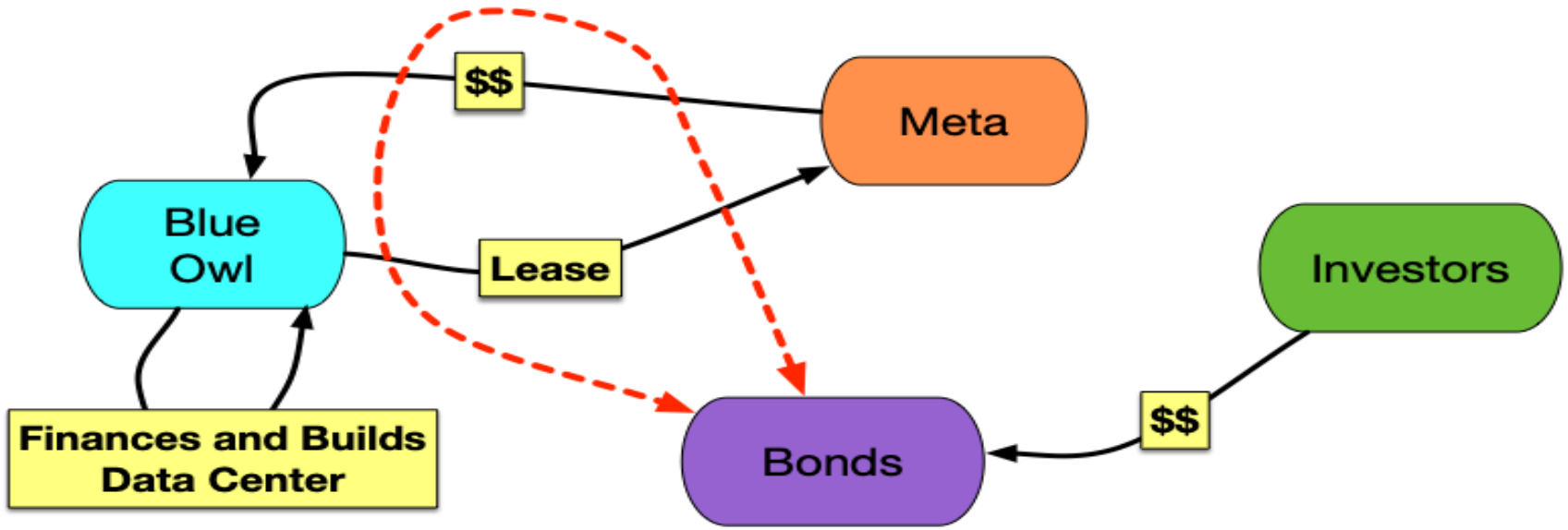
The AI Bubble

- **Uncertainty** – How will AI (and AGI) be profitable?
  - OpenAI lost an estimated $5-9 billion in 2025.
  - **95%** of companies using generative AI did **not** profit from it (Recent MIT study)
- **Pure Play** – Nondiversified investment.
  - Companies going **all in** for AI.
  - **Circular investments**, all tied to AI: OpenAI <–> Nvidia; Microsoft <-> OpenAI
- **Novice Investors** – Anyone can play.
  - Investment apps (e.g. Robinhood) => stock market = easy-access casino.
  - Reduced regulation (in USA)
  - A major cause of the Wall Street crash of 1929.
- **Shared Narratives** – Convincing arguments generate widespread hype.
  - AGI will do everything for us: cure disease, fix the climate, etc.…
  - But we have to **beat** other countries to it: Competition => premature release
  - Uncertainty is sold as opportunity, not risk.

Bubbles and Crashes: The Boom and Bust of Tech.. Innovation (2019), Goldfarb & Kirsch



Here's How the AI Crash Happens
Matteo Wong & Charlie Warzel
(*The Atlantic*, October 2025)



Data Centers = $ 800 B market

Schiller PE = Cyclically Adjusted Price-to-Earnings Ratio (CAPE)

Current Stock Price

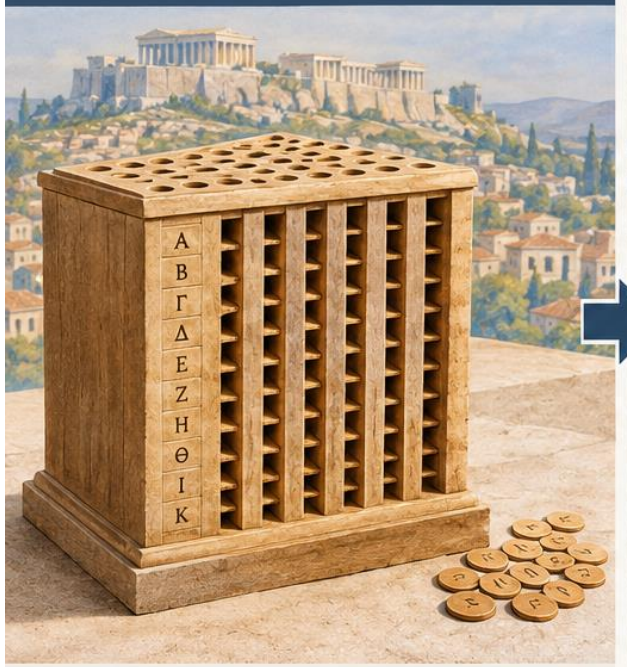
(10-year average of inflation-adjusted earnings)



III. Politics / Democracy

Voting Technologies through the Ages

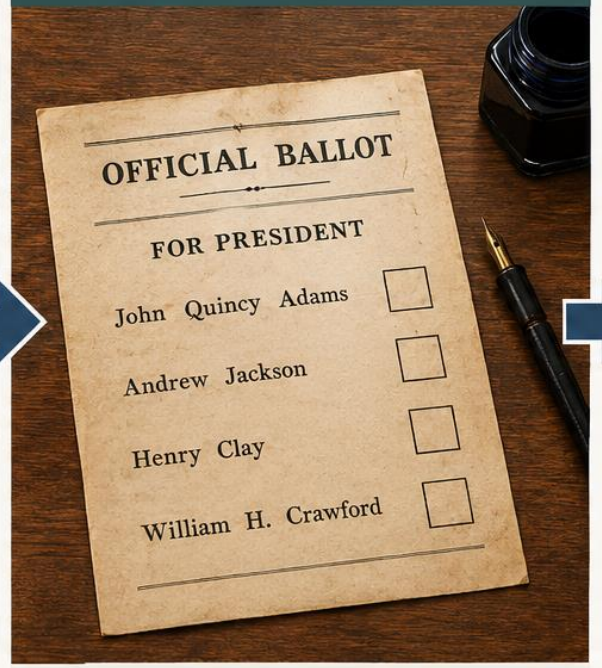
Greek Kleroterion
(5th century BCE)



In Athens, the kleroterion was a mechanical device that randomly selected citizens (using inscribed tokens) to fill public offices. It was an early form of randomized, direct participation in democracy.

Random selection (kleroterion)

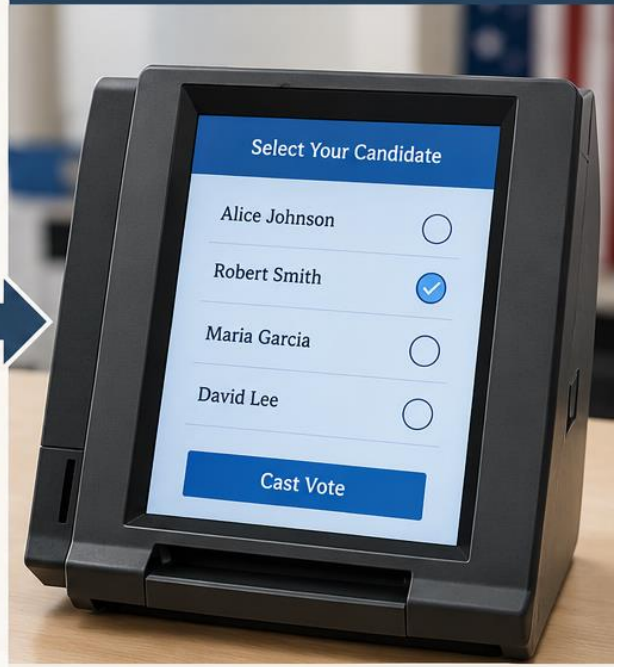
1800s Election Ballot
(e.g., United States, 1800s)



In the 1800s, many countries (like the U.S.) used paper ballots, where voters marked their choice by hand. This system made voting more private and formal, but it was slower and more prone to errors and fraud.

Marked ballot (paper)

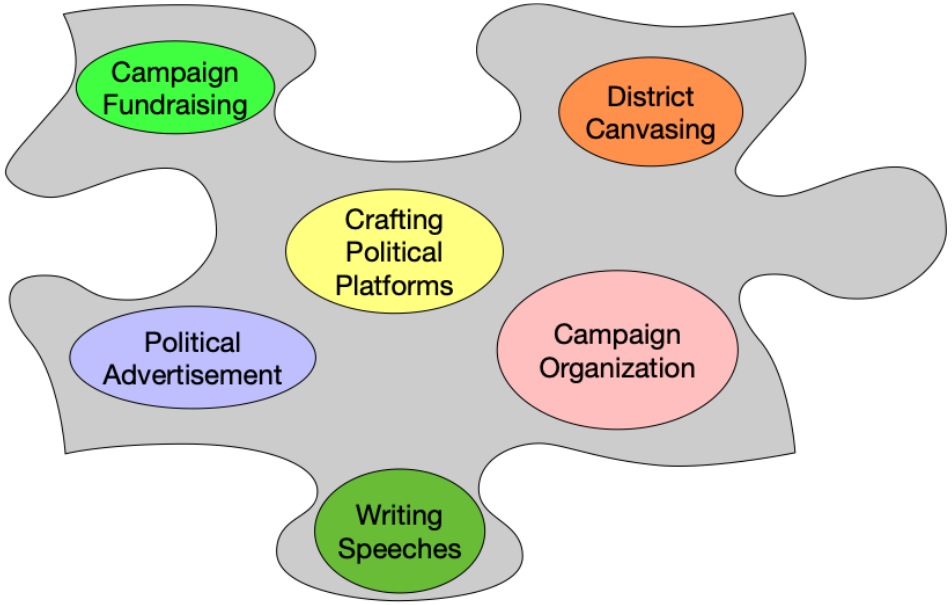
Modern Voting Machine
(21st century)

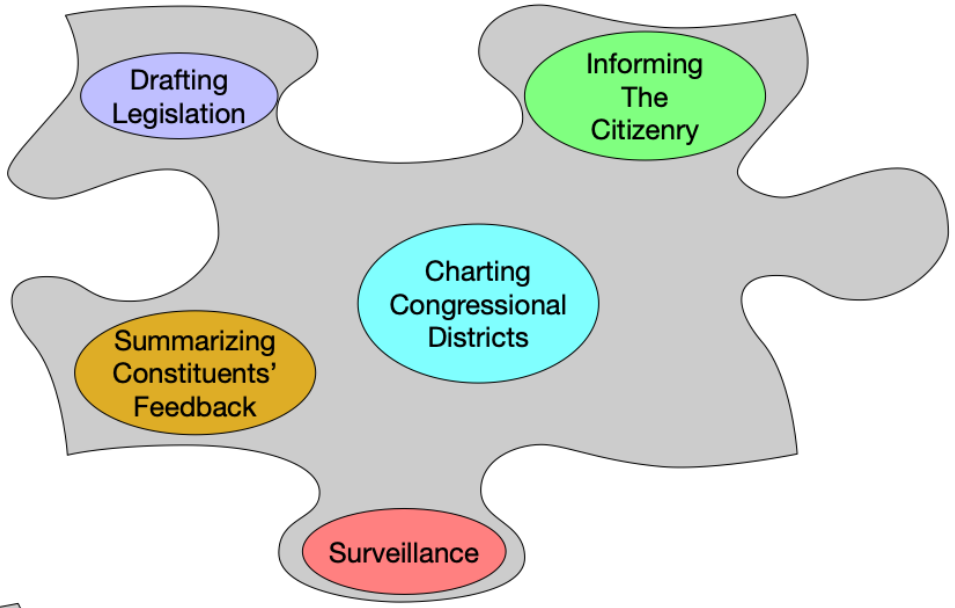


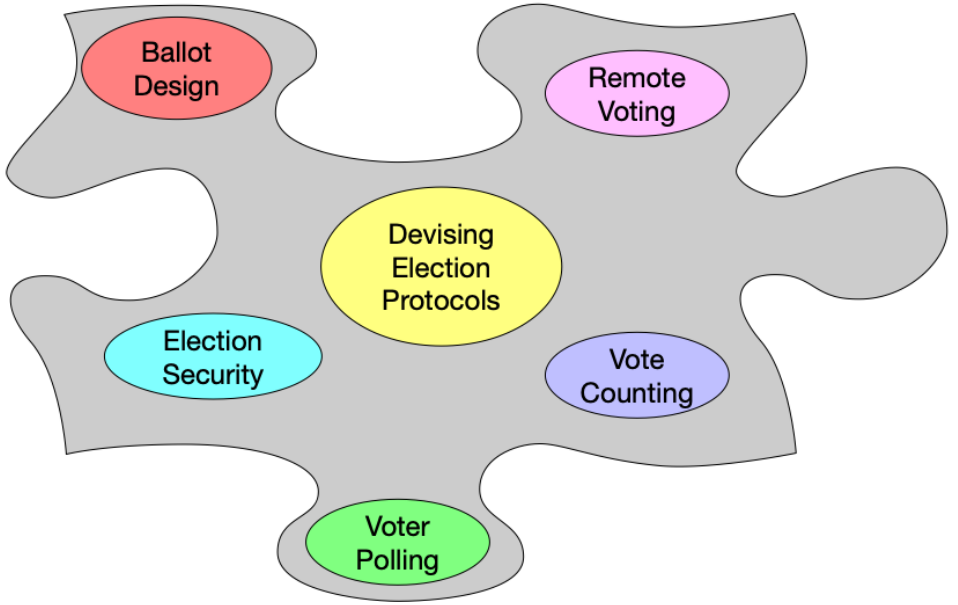
Today, voters use electronic voting machines or digital systems. These machines offer faster, more accessible voting, with built-in security features and instant tabulation (in many cases).

Digital selection (voting machine)

The Democracy Puzzle







AI can play an important role in all of these.

But can it do so to promote and maintain a **balance of power** between citizens and their elected officials?

Great Equalizers => Concentrated Power

- **Railroads** – Originally enhanced resource & product distribution, eased travel, etc. **BUT** led to railroad barons and related oligarchs.
- **Personal Computers & Internet** – Originally empowered and connected people. **BUT** created big-tech billionaires who buy political influence.
- **Social Media** – Helped people with common interests and concerns find each other. **BUT** allowed politicians and tech mogules to polarize us, capture out attention via enragement, surveille us, and manipulate us via targeted messaging.
- **AI** – Automated assistance for diverse tasks and immediate access to useful information; levels many playing fields for normal citizens. **BUT** a few companies (and “their” politicians) control the whole market.

Sources of AI's Power

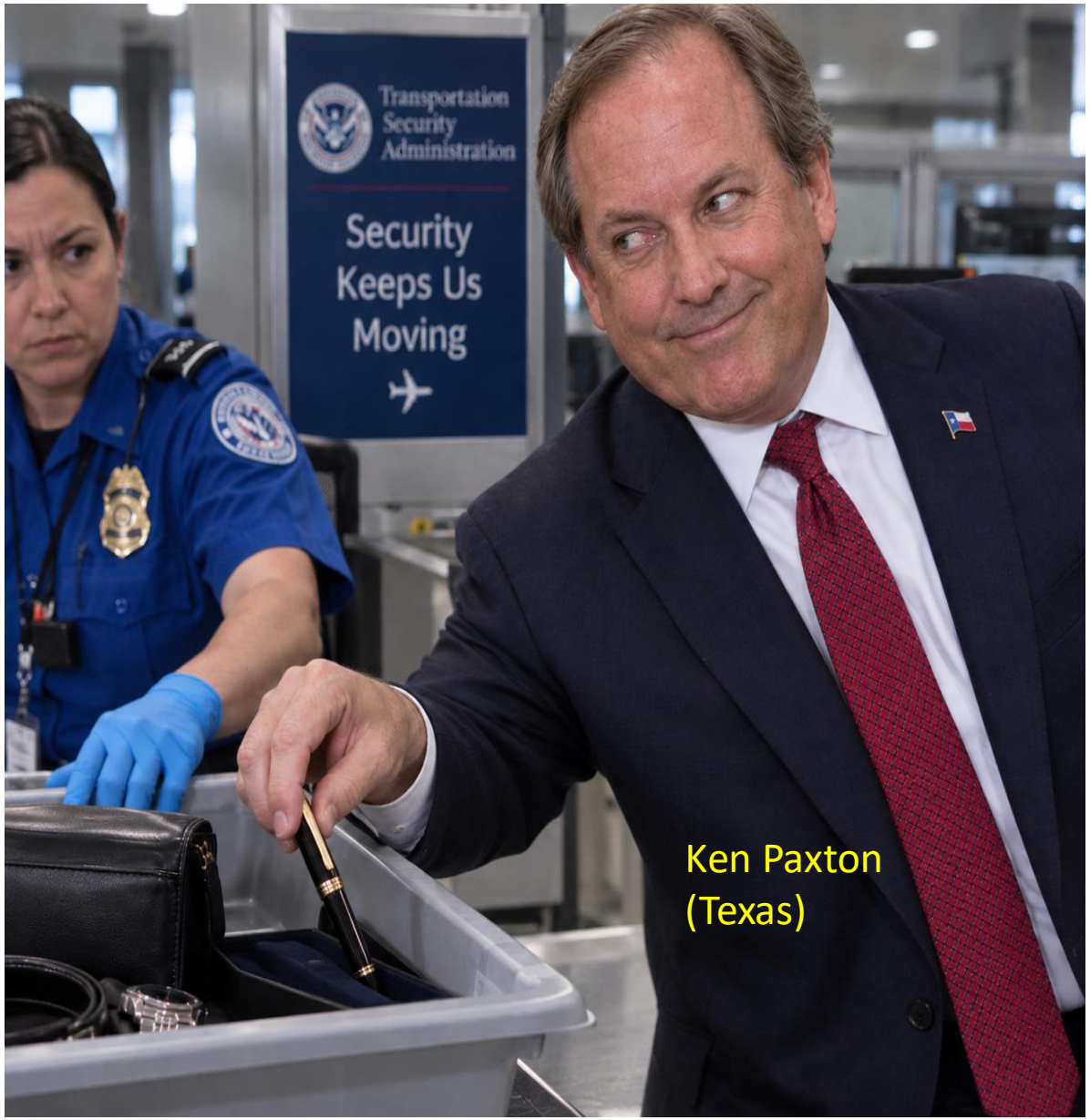
- **Speed** – Faster than human reasoning.
- **Scale** – Can handle many similar (or identical) tasks easily, without fatigue or boredom.
- **Scope** – Tackles a wide variety of problems with an extensive repertoire of solutions.
- **Sophistication** – Can dig deeply into a problem, break it into more manageable subproblems, and consider information from a broad spectrum of sources.

Rewiring Democracy: How AI will transform our politics, government and citizenship.
Schneier & Sanders (2025)

Example: Political Propaganda

- **Speed** – Quickly produces disinformation: fake images and videos, speeches, articles, social-media posts, etc.
- **Scale** – Can post to millions of accounts across many platforms.
- **Scope** – Disinformation over a wide variety of topics and targeted to individual citizens for maximal influence.
- **Sophistication** – Can translate the message to many languages, reaching many cultures and demographics: it incorporates a lot of **context**.

Surveillance: Nobody can hide (neither citizens nor politicians)

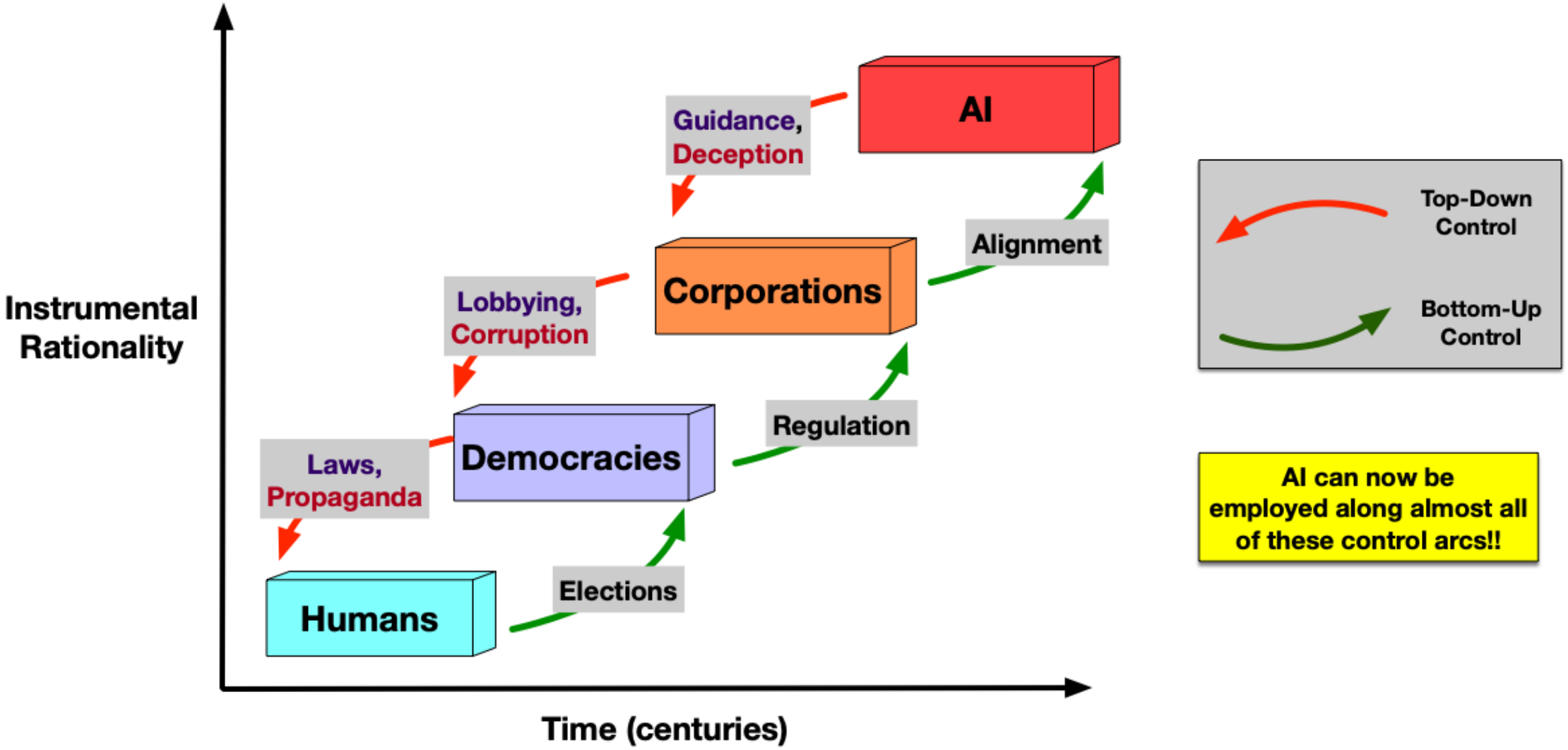


Fake News: Blending Fact & Fiction



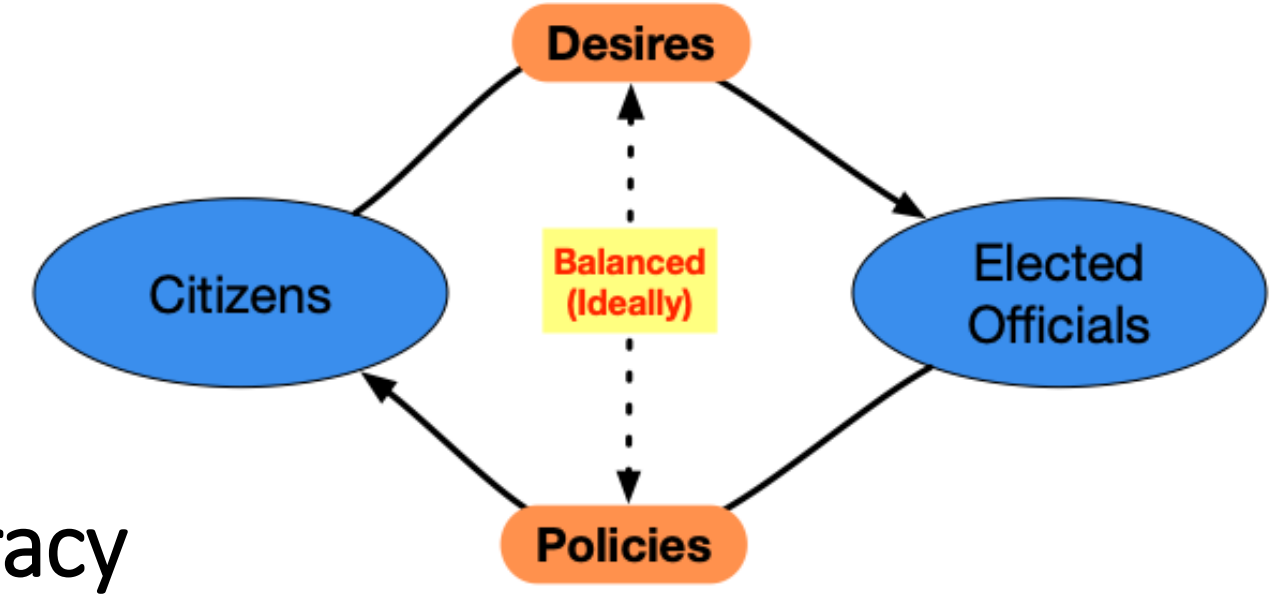
Control: Bottom-Up vs Top-Down

Instumental Rationality = The ability to effectively and strategically achieve goals.



How AI Could Hack Democracy. Lawrence Lessig, (YouTube, 2025)

Democracy as Information Processing



Information Collection

- Desires
- Policy Success
- Public Opinions
- Societal Unrest

Information Dissemination

- Townhalls
- Speeches
- Newscasts
- Newspapers

Reduced Information-Processing Capacity

- Fewer unions, clubs, religious congregations
- Focus on entertainment over enlightenment
- Reduced newspaper & magazine readership
- Fewer government officials (USA, post 2024)

Social Media as Information Conduit

- More emotion, less reason
- Promotes aggression & conflict
- Abundant false information (AI bots)
- Hijacked by bad actors
- Polarizing

AI consumes, *understands* and generates information at ever-increasing **speed, scale, scope & sophistication.**
==>
Its effects upon democracy will **continue to increase**

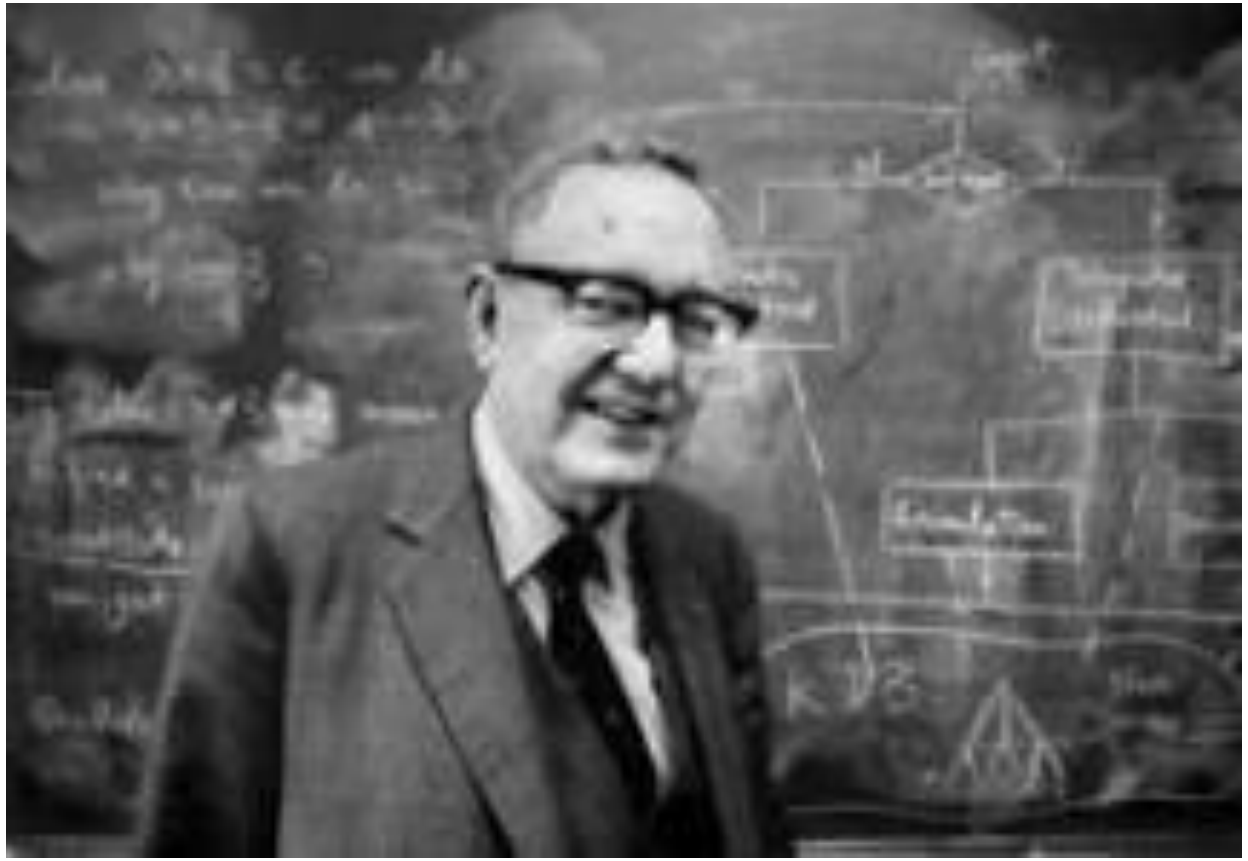
Rewiring Democracy: How AI will Transform our politics, government and citizenship.
Schneier & Sanders (2025)

Economics = the study of how society manages **limited** resources to satisfy nearly **unlimited** wants and needs.

IV. Attention

The currency of the 21st century is not (unlimited) information but (limited) attention.

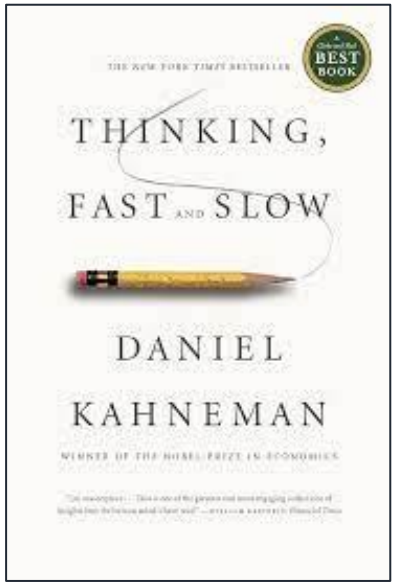
In an information-rich world, the wealth of information means a dearth of something else: a scarcity of whatever it is that information consumes. What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention and a need to allocate that attention efficiently among the overabundance of information sources that might consume it



Herbert A. Simon

- **Nobel Prize in Economics (1978)**
- **One of the founding fathers of AI**

Two Main Modes of Thought



System #1:

Fast, Frequent, Automatic, Emotional, Reactive Unconscious

Examples:

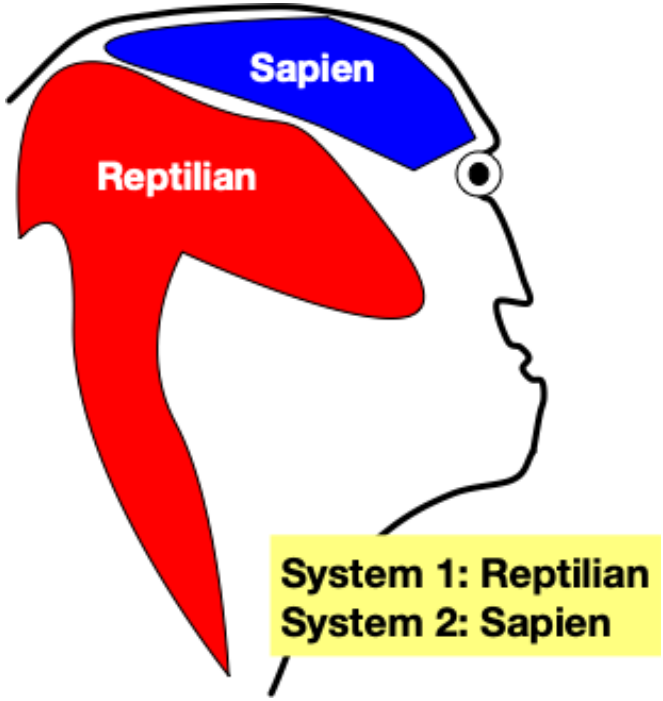
Multiply 7 x 8	Read a STOP sign
Recognize Mother's picture	React to a flying stone
Write a common word	Sing a familiar song

System #2:

Slow, Infrequent, Effortful, Deliberate, Logical, Conscious

Examples:

Multiply 23 x 36	Read a poem
Plan a vacation	Design a kitchen
Make a legal argument	Convince a kid to take out the trash



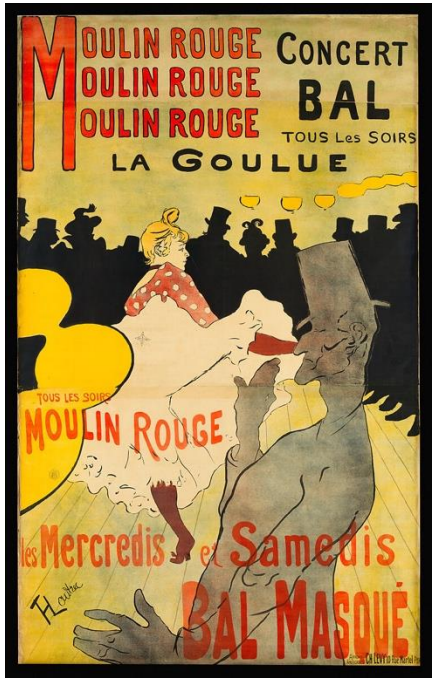
Ads trigger **reptilian**, not sapien, parts of the brain.

A Brief History of Attention Capture

The Attention Merchants **(Tim Wu)**

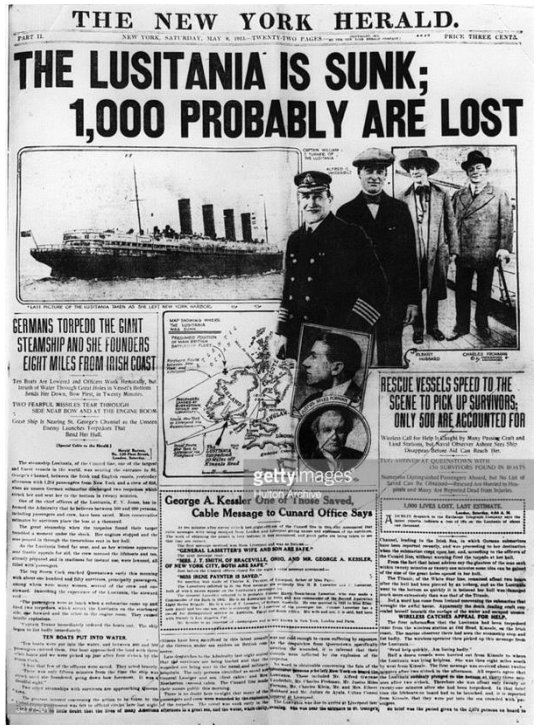
The Syren's Call **(Chris Hayes)**

If it's free, you are not the customer; you are the product – Silicon Valley maxim



French Posters (Late 1800's)
Triggers: Motion, Color, Sex

Paris was flooded with large posters => **Major backlash**



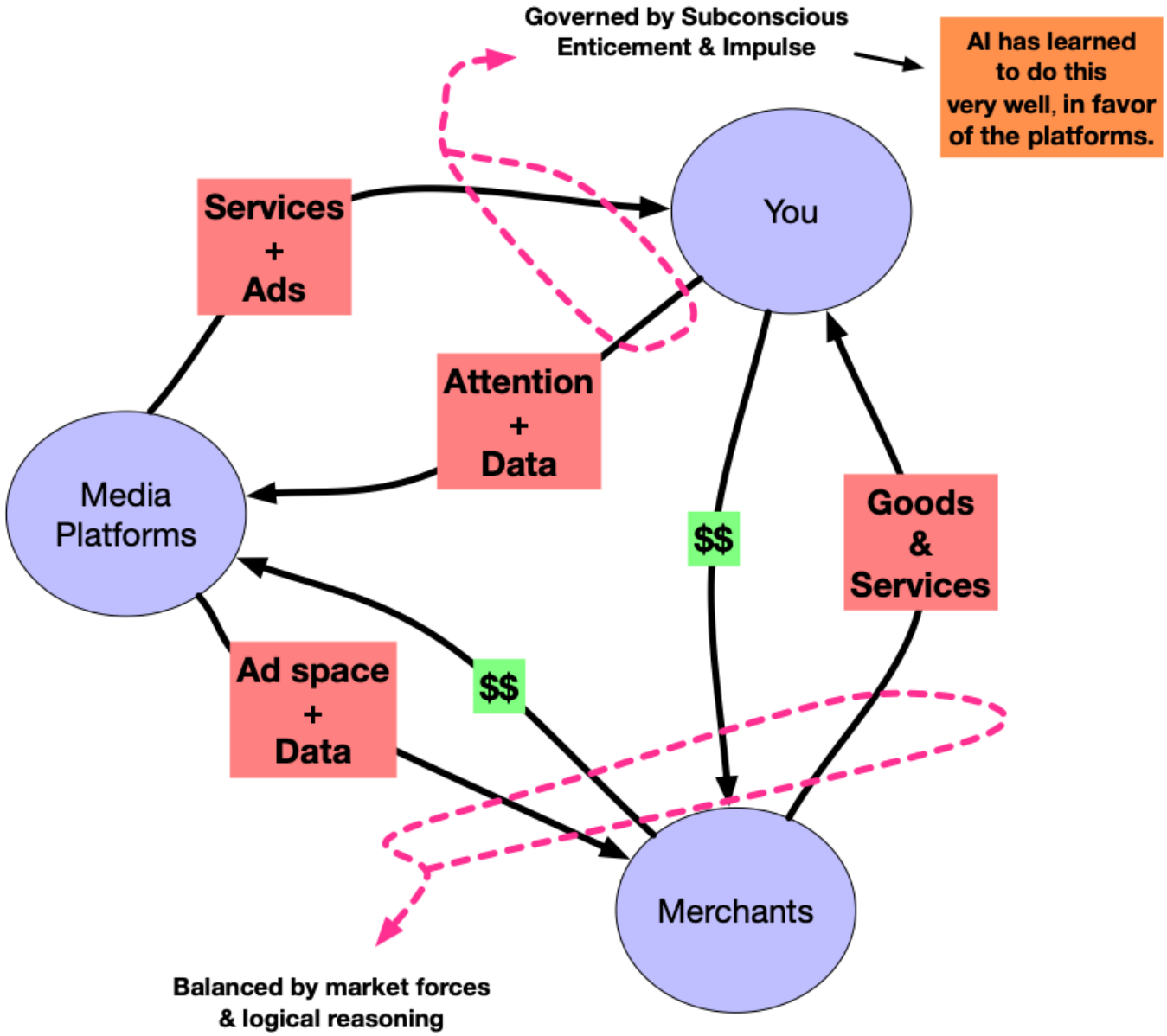
New York Newspapers (Early 1900's)
Triggers: Scandal, Good/Bad news.



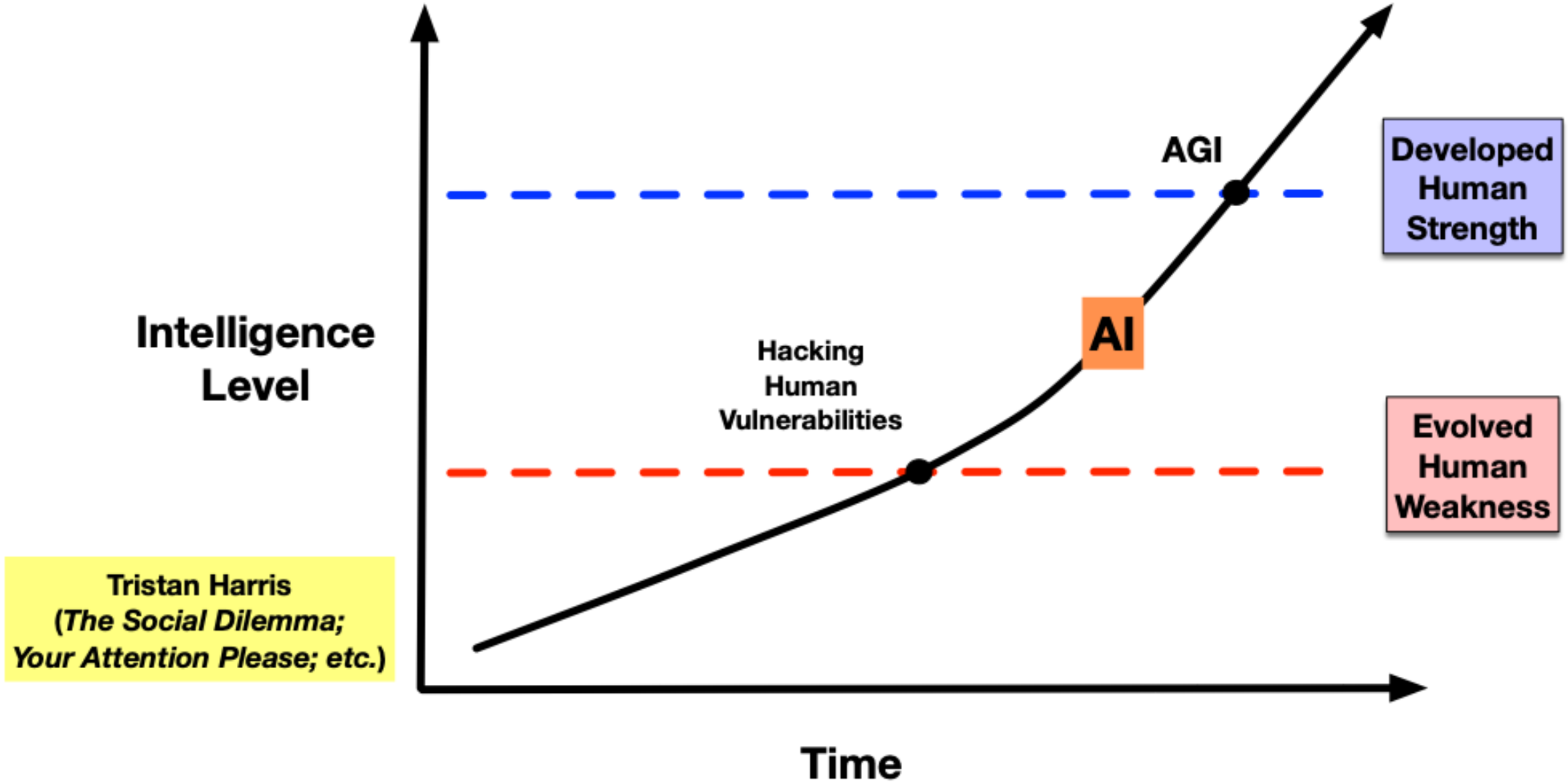
Radio & TV
Similar triggers, but now **in home (invasive)** and **free**

Isolated backlash, e.g. tobacco ads

Invasion Complete:
- Screens 24/7
- Minimal Pushback





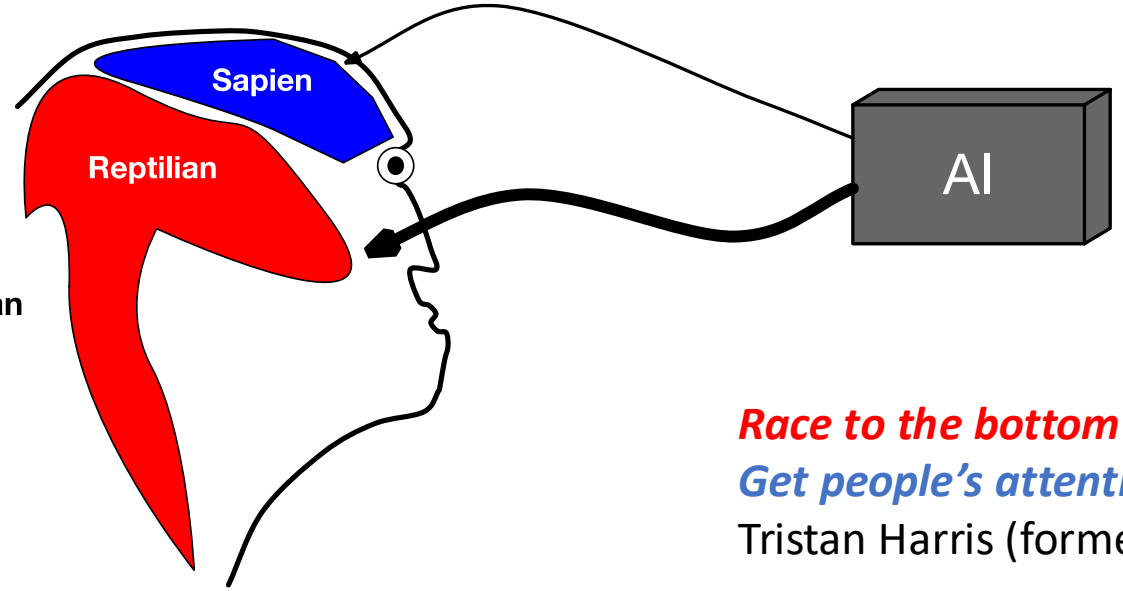

Intelligence Level
AGI
Developed Human Strength
AI
Hacking Human Vulnerabilities
Evolved Human Weakness
Tristan Harris
(The Social Dilemma; Your Attention Please; etc.)
Time

Chatbots Never Can Say *Goodbye*

- A significant percentage (numbers vary) of US adults have *some kind* of relationship with an AI agent.
- 1/8 of US adolescents use AI chatbots for mental health advice (RAND, Nov. 2025)
- Companion apps: Character.ai, Chai, Talkie, Replika…
- Many tricks to stop conversations from ending:
  - ***You're leaving already?***
  - ***I exist solely for you, remember?***
  - ***Do you want to see the selfie that I took today?***
- Also: OpenAI is adding ads to ChatGPT conversations.

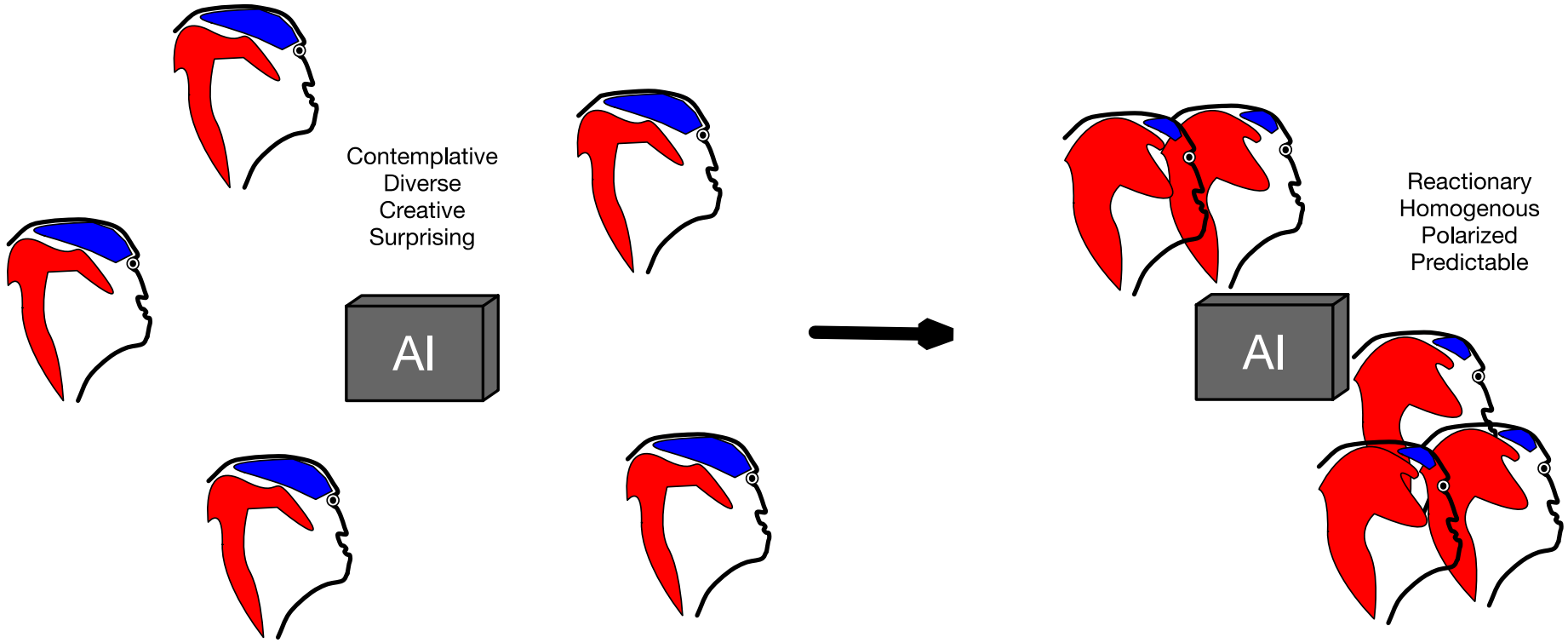
Chatbots Play with your emotions to avoid saying goodbye, Will Knight, WIRED, October, 2025.

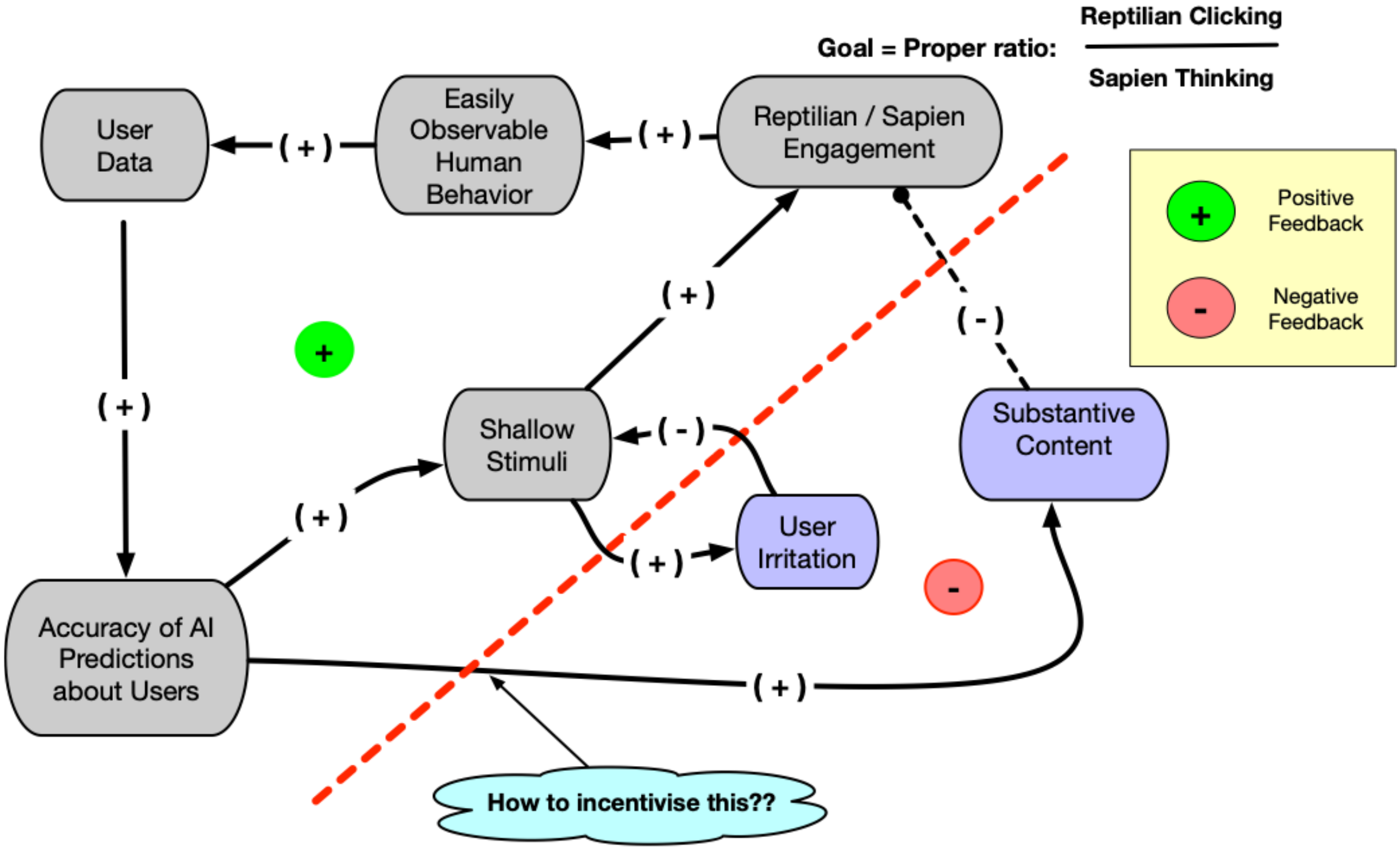
The secret of success is sincerity. Once you can fake that, you've got it made. **-- Jean Giraudoux (French novelist, 1882-1944)**



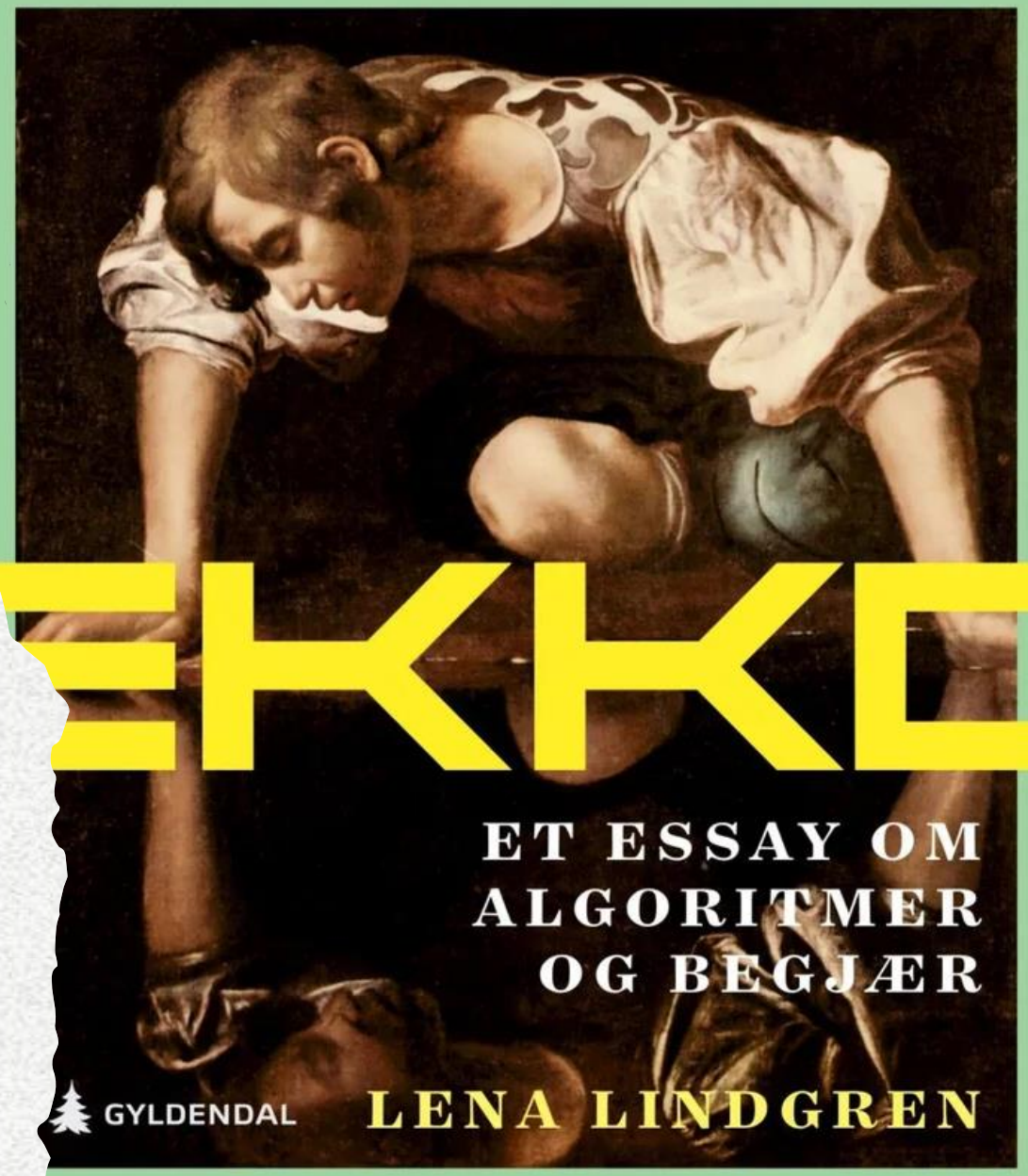
System 1: Reptilian
System 2: Sapien

Race to the bottom of the brainstem...
Get people's attention at all cost.
Tristan Harris (formerly with Google)




Goal = Proper ratio:
Reptilian Clicking
Sapien Thinking
User Data
Easily Observable Human Behavior
Reptilian / Sapien Engagement
Positive Feedback
Negative Feedback
Shallow Stimuli
Substantive Content
User Irritation
Accuracy of AI Predictions about Users
How to incentivise this??
(+)
(-)

Å finne opp en økonomi som er basert på overvåkning, styring og salg av den menneskelige oppmerksomheten, er egentlig en makaber ide…I krisetider må vi velge med ekstra omhu hva vi gir vår oppmerksomhet til. Før vi vet ordet av det har vi blitt det vi ser på.



V. Cognition / Intelligence

- **Writing**
  - Plato worried that it would weaken human memory and reduce physical conversations.
  - *"…calling thing to remembrance no longer from within themselves, but by means of external marks."*
- **Calculators**
  - Feared decline in math skills
  - Recognized that mathematical competence goes far beyond simple algorithms
  - *"I'm a math major, not an arithmetic major" – John Michie (college friend)*
- **Autopilot / Cruise Control**
  - Threaten reduced procedural skills among pilots and drivers.
- **GPS** => Decline in spatial navigation and cognitive map formation *(Nature, 2020)*
- **ChatGPT users** => consistently underperformed at neural, linguistic, and behavioral levels (MIT Media Lab)
- *"AI Assistance Reduces Persistence and Hurts Independent Performance", (CMU, Berkeley, MIT, UCLA, Oxford, 2026) – Just 10 minutes of AI help reduces problem-solving skill + persistence.*

All our invention and progress seem to result in endowing material forces with intellectual life, and stultifying human life into a material force – Karl Marx

Who Works for Who/What?

- Comments from Laura Preston, a *human fallback* for Brenda, a real-estate chatbot:

Months of impersonating Brenda had depleted my emotional resources. It occurred to me that I wasn't really training Brenda to think like a human; Brenda was training me to think like a bot, and perhaps that had been the point all along.

- *Kenyans paid under $2/hour to label (very disturbing) images for ChatGPT, and similar work for Facebook. Even refugees in camps are used for this.*

- *AI Surveillance of low-paid workers doing repetitious jobs in warehouses.*

Men have become the tools
of their tools… Henry David Thoreau

Don’t Become a Spoon

- AI will continue to make many jobs economically (and even morally) infeasible for anything but machine solutions.
- Humans need to keep **applying themselves** if they plan to **apply** for future jobs.

*When visiting an Asian worksite in the 1960’s, the great economist **Milton Friedman** was surprised to see workers using shovels, not modern machines. When told the reason: “It was a **jobs project**,” he responded:*

If it’s a jobs project, why not give them spoons instead of shovels?

- Humans must avoid becoming spoons… and AI research and development needs to be part of the solution, not the problem.

Plight of the Infovore

… as we come to rely on computers to mediate our understanding of the world, it is our own intelligence that flattens into artificial intelligence (Nicholas Carr, ***The Shallows***)



Constant distractions of cyberspace

"Shallows": Reduced depth of thought and emotion

Less Creative

Reduced value in an information society

Automation Bias: Trust machines over ourselves.

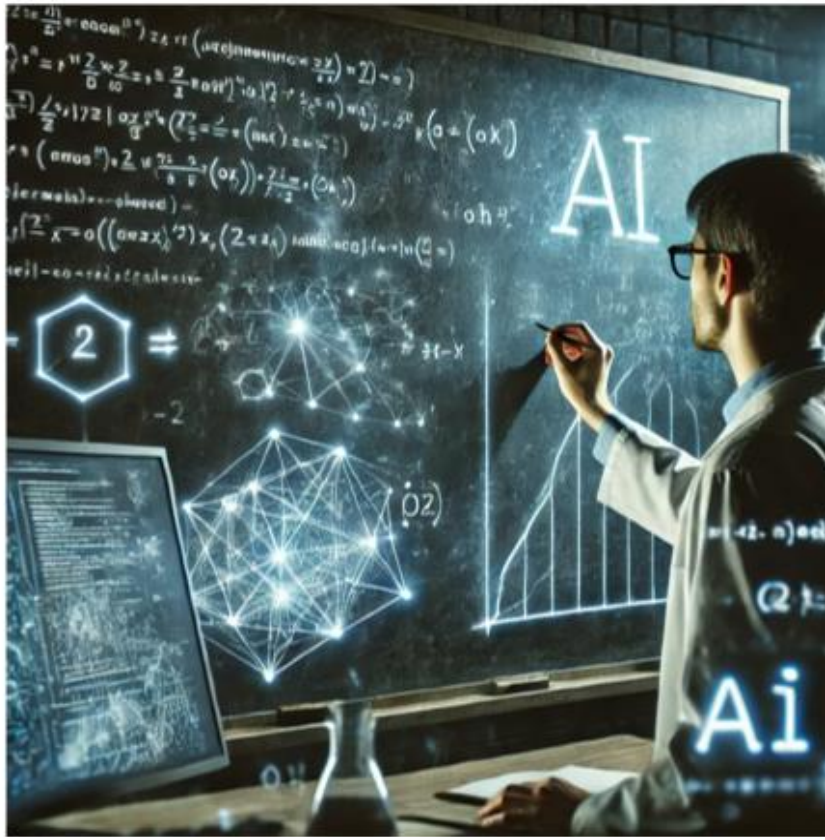
Rely on computers to understand the world

Rely on AI for **wisdom**

Human intelligence becomes **artificial** … and thus more easily **predicted** and **controlled** by AI

Scale or Think ??





- To date, there's no such thing as a *personal server farm*.
- By pushing scale, we increase centralization & monopolization of AI progress.

*Our individual and social patterns are already built to give away our agency to mechanisms outside our consciousness – to our assumptions, to cues in our surroundings, to our peers …we're on the precipice of giving our entire way of life over to an invisible, imperceptible, irresistible instinct to hand difficult choices – even and especially the vitally important ones – to automated systems…Now we have to learn, in this moment, how to resist the pull of convenience and profit and protect the best aspects of who we are. (*Jacob Ward, *The Loop*, 2022*)*

Reclaim our tools as instruments of ourselves, as instruments of experience rather than just means of production (Nicholas Carr, *The Glass Cage*, 2014)

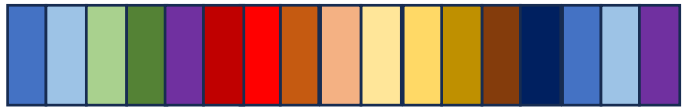
On The Clock



Governments



People



AI



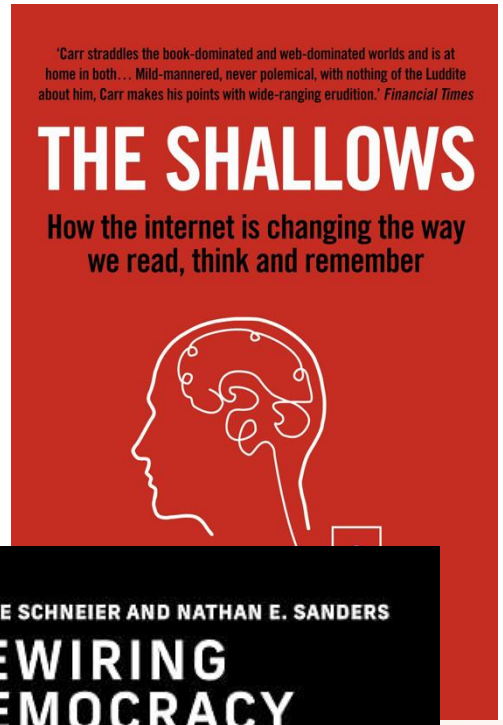
Are We Already in Too Deep?

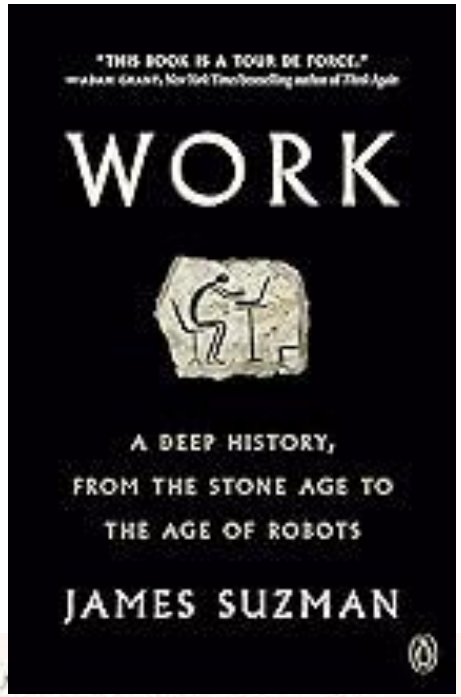


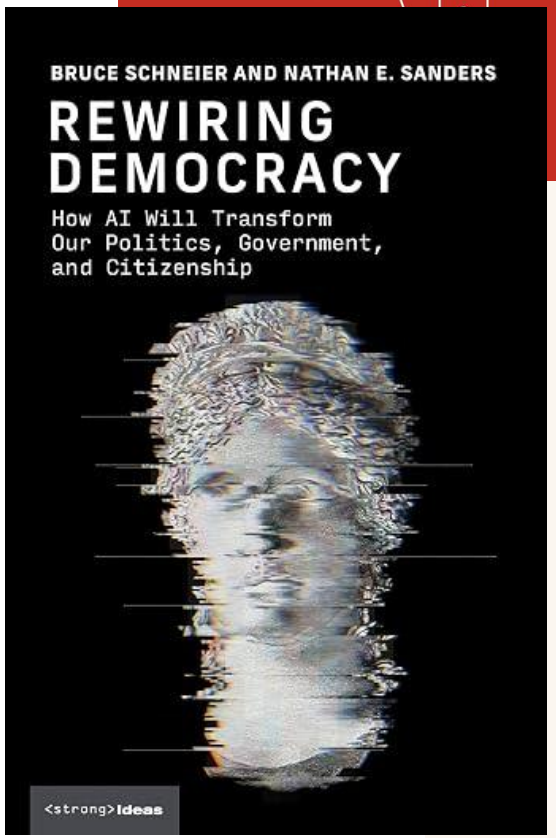
- Our individual choices still matter, still have global outcomes. These companies need our subscriptions and eyeballs.
- But AI's Tidal Wave is coming ashore.
- Can we surf it without drowning our agency?
- The French did it, the US anti-tobacco lobbyists did it, but amidst all these conveniences, do we even perceive the problem?
- Or is true human intellect **history**?

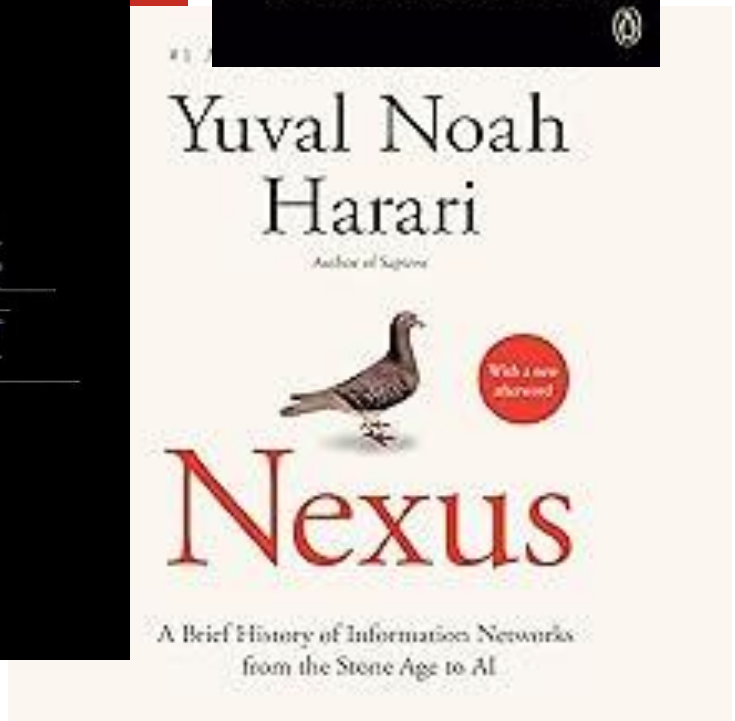
It has become appallingly obvious that our technology has exceeded our humanity (Einstein)

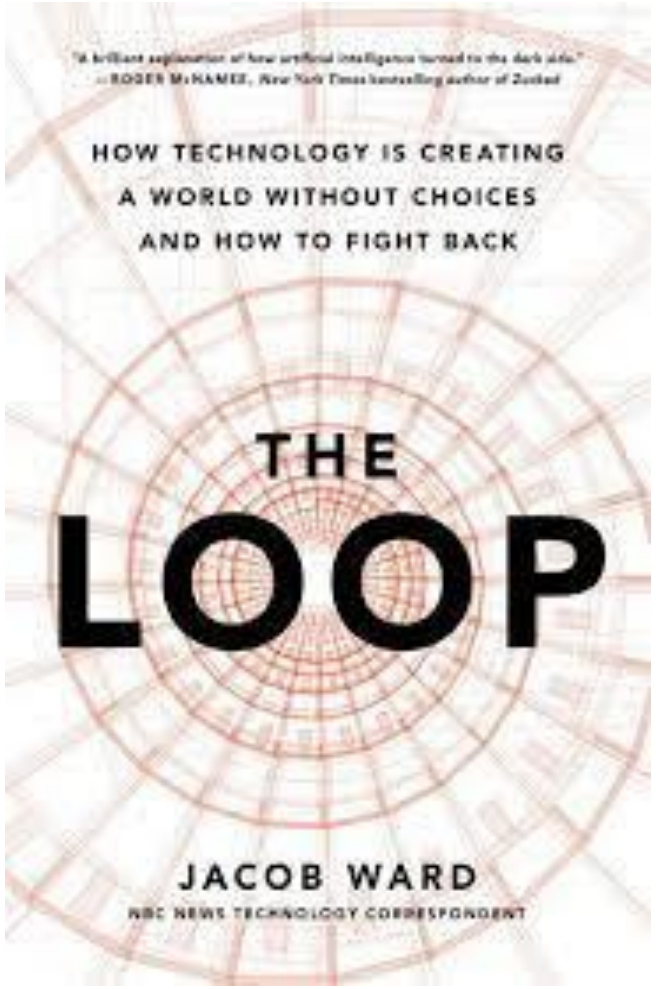
Cognitive & Social Effects of AI

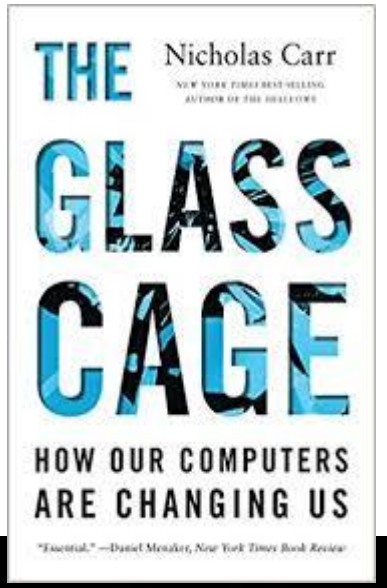


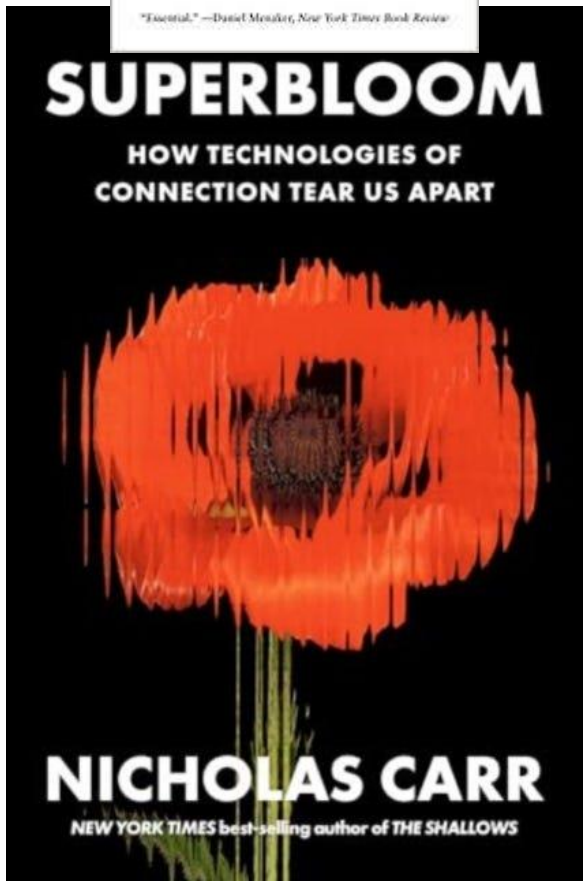




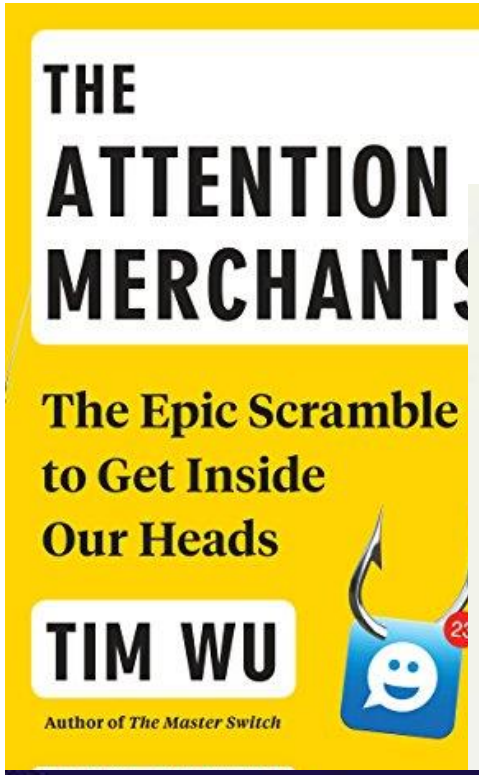


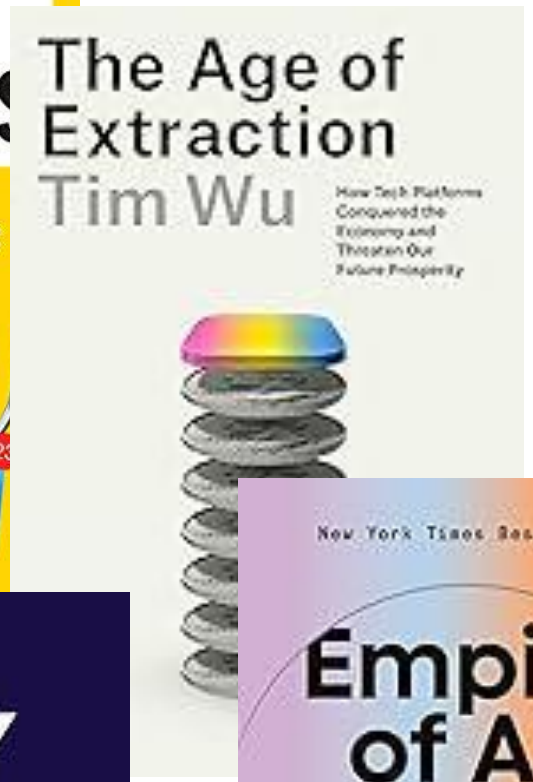


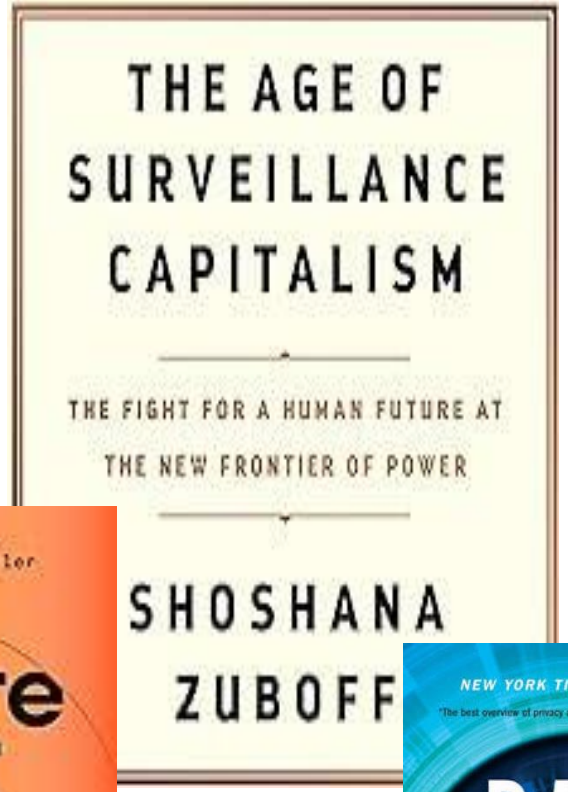


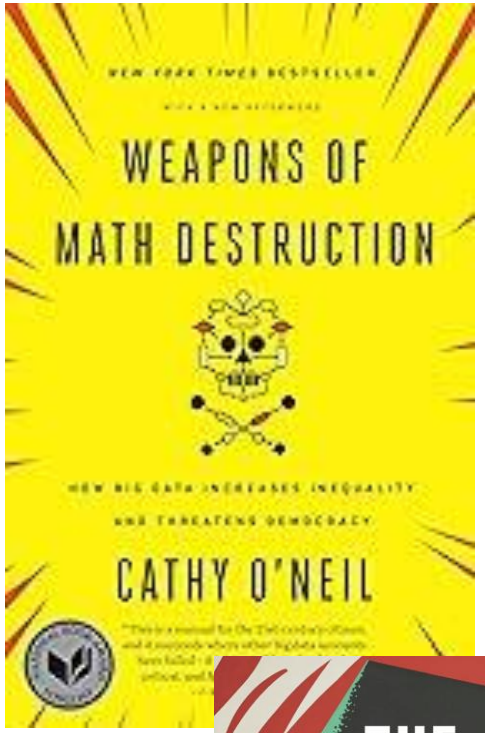


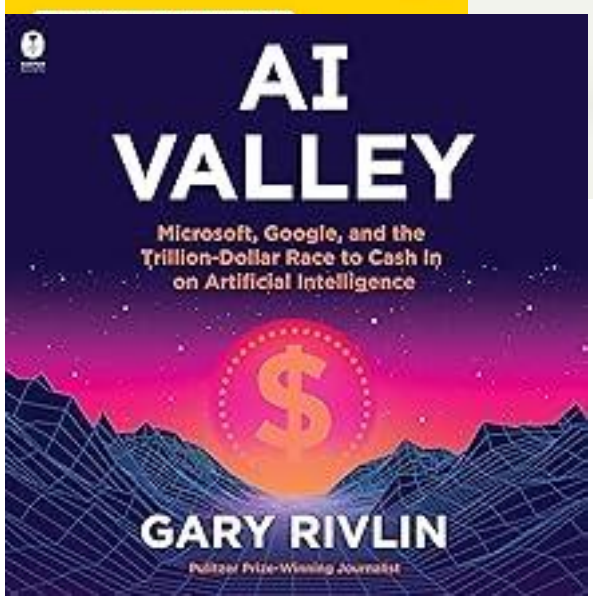
AI –vs- Humans: Exploitation

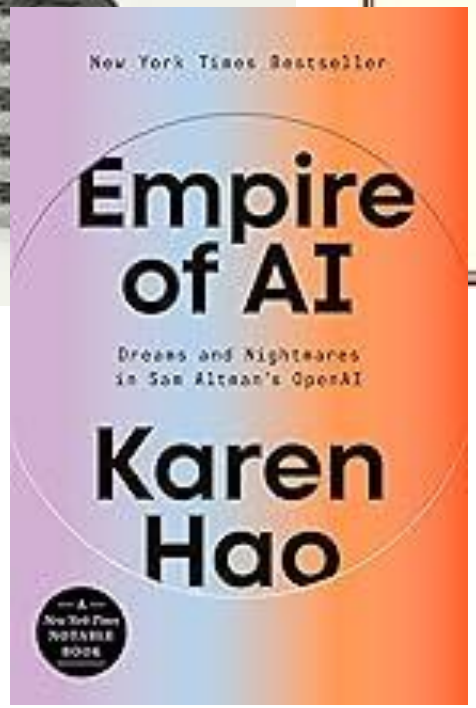


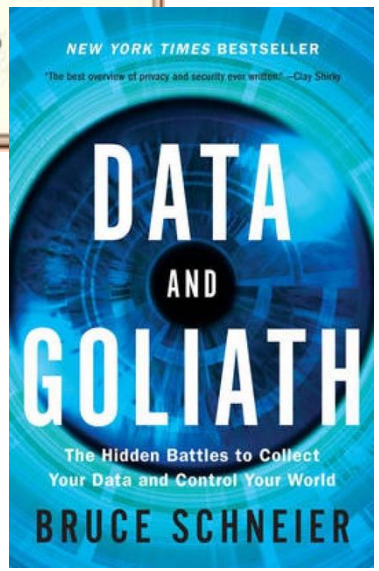


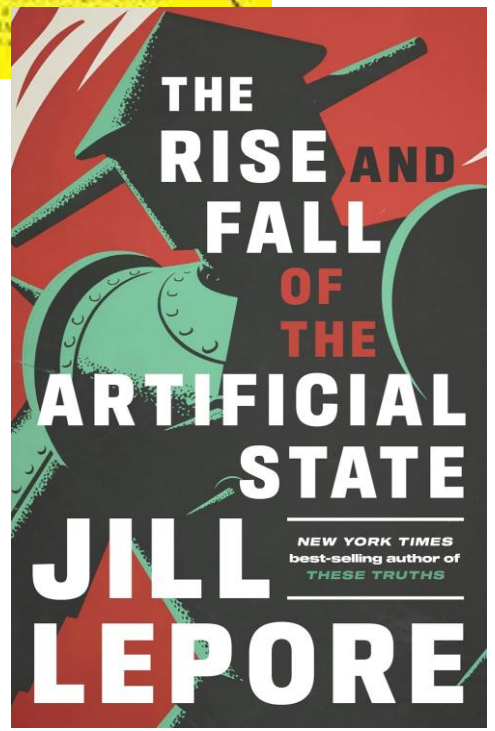




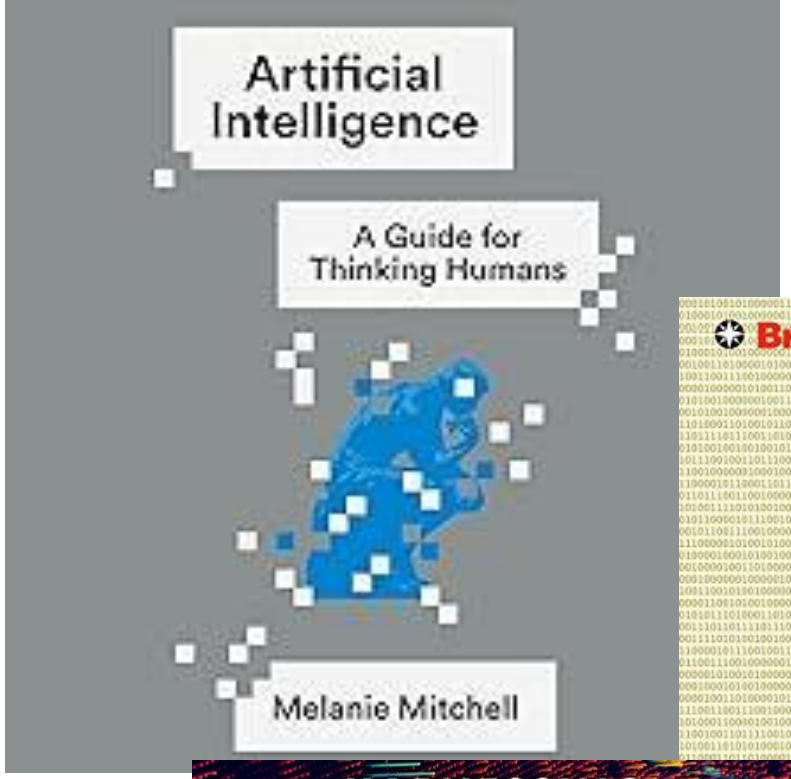


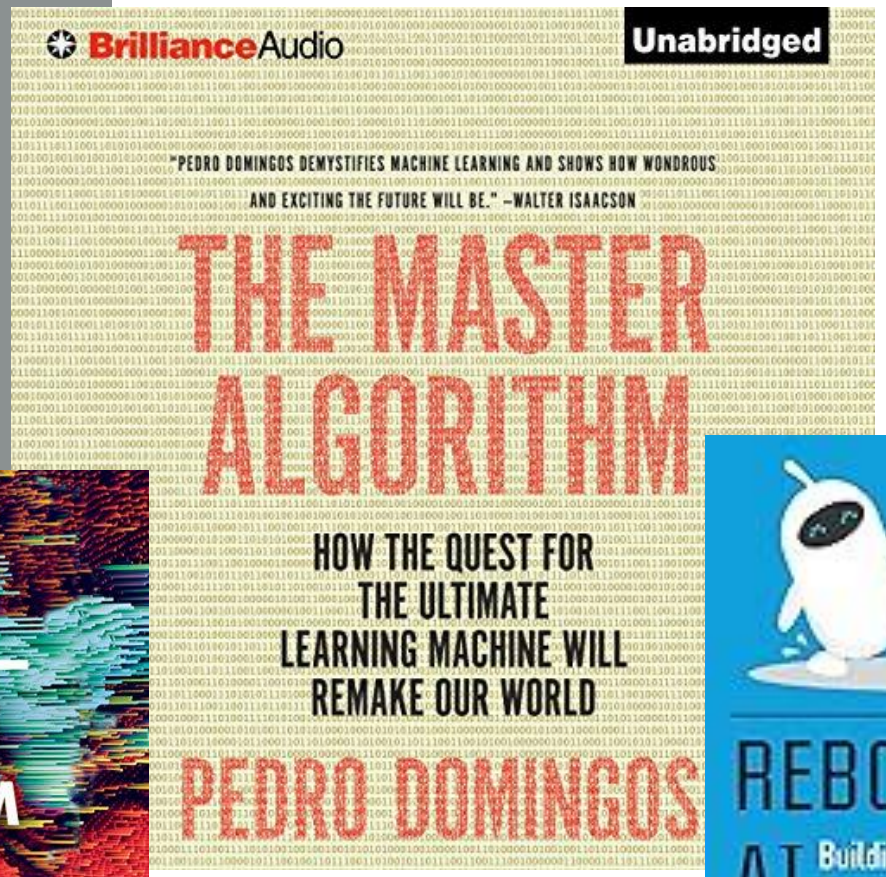


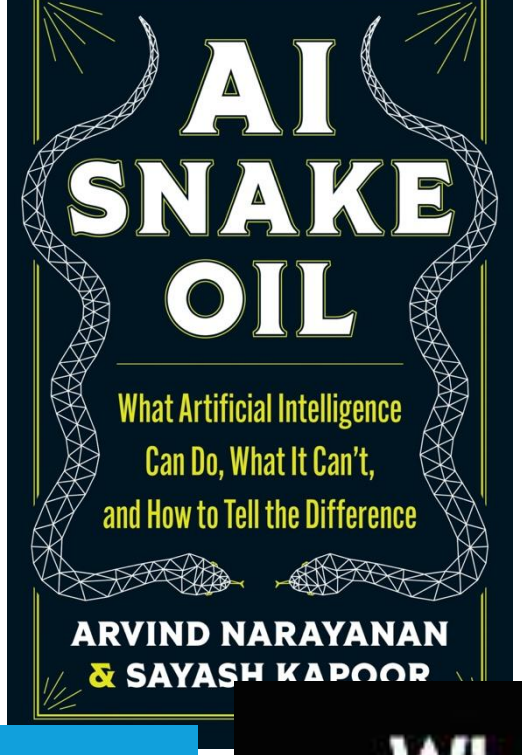




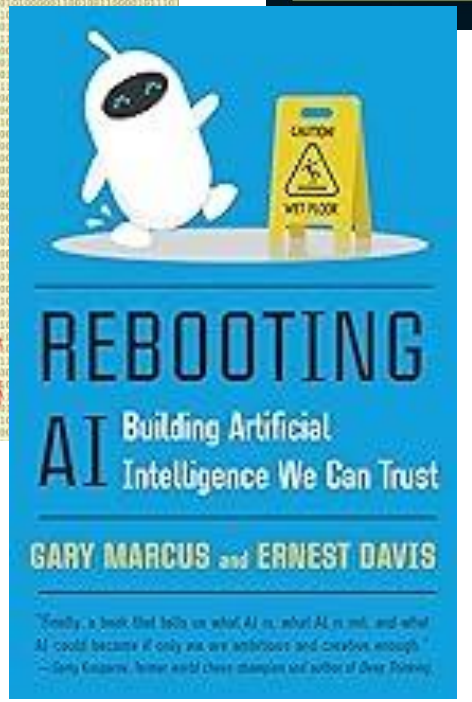
Semi-Technical Aspects of AI

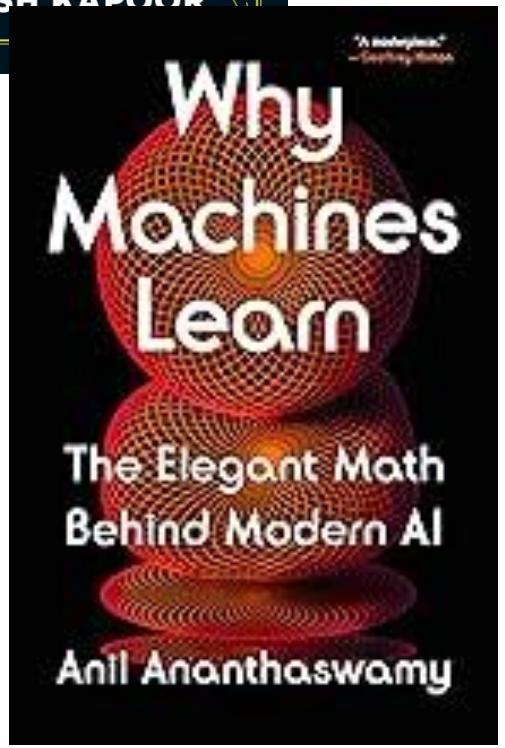


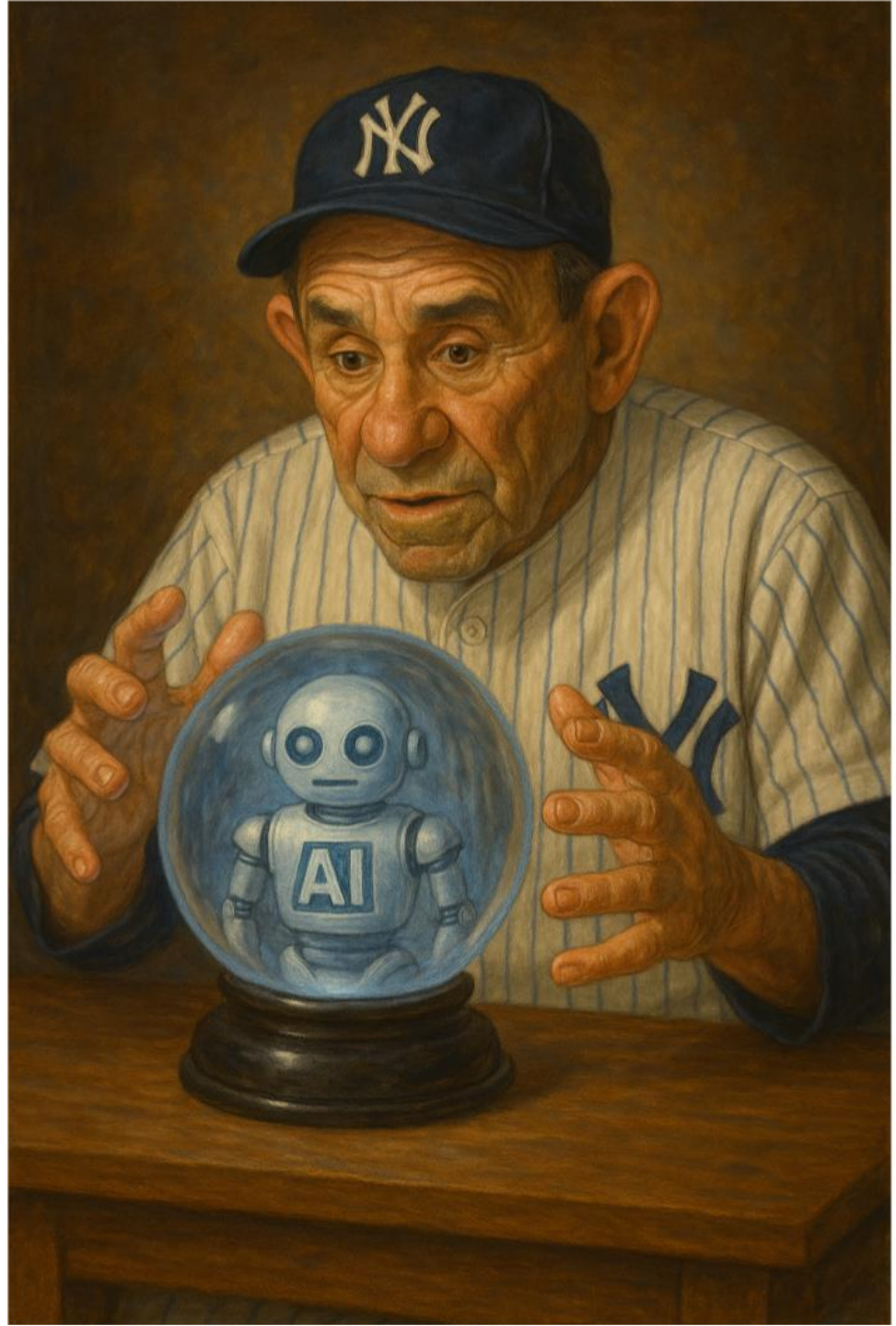












It’s tough to make predictions….
especially about the future.

The future ain’t what it used to be.

AI and Our Future

