

Daron Acemoglu

Power and Progress: Our Thousand-Year Struggle over Technology and Prosperity

On Wednesday, June 14, Daron Acemoglu joined Markus' Academy for a lecture on his book "Power and Progress: Our Thousand-Year Struggle Over Technology and Prosperity." Acemoglu is the Elizabeth and James Killian Professor of Economics in the Department of Economics at the Massachusetts Institute of Technology.

A few highlights from the discussion:

- **A summary in four bullets**
 - Economists tend to think that the "productivity bandwagon" is guaranteed: as firms try to hire more workers they will increase wages.
 - However to secure shared prosperity from technological progress you need two things: (1) Technology has to go in a direction that improves workers' productivity. (2) Institutional and ideological paradigms must give workers a chance to benefit from that marginal productivity.
 - We must redirect technological change towards new tasks for greater worker productivity, better information for workers, and greater worker autonomy. AI has an unparalleled ability to do so and complement knowledge work.
 - It is not clear that we need big tech. It is the way the market has gone: it has led to huge foundation LLM models, trained on the entire internet, with the goal of dominating the search market. An alternative would have been to have smaller scale models that are more domain-specific, which would have been much more open for many companies to enter.
- **[0:00] Introduction**
 - Progress is technological advancement. But technology can be labor or capital-augmenting. Whether labor-augmenting technology will lead to more labor demand will depend on the elasticity of substitution between labor and capital.
 - Since the marginal product of labor determines the wage, the curvature of the production function will determine the labor share. Investors may reject a technological advancement because it might reduce their share of output.
 - The question that Daron will address: who decides the direction of technological progress? To a large extent the basic research is driven by the military, though sometimes, especially in the later stages of innovation, individuals and capital markets can also play a role.
- **[9:02] Is the "productivity bandwagon" guaranteed?**

- Those who benefit from new technologies can often see massive rewards, without shared prosperity for everyone. Whichever vision/ideology predominates is closely related to who will gain.
- Ferdinand de Lesseps was a techno-optimist who successfully spearheaded the Suez Canal, but his hubris led to a catastrophic failure with the Panama Canal, plagued with deaths and bankruptcies.
- The productivity bandwagon: there is no guarantee that an advancement will translate into shared prosperity. However economists tend to believe so because of the labor market: as firms try to hire more workers they will increase wages.
- However the bandwagon is not secure. Two examples that prove this are medieval windmills and Eli Whitney's cotton gin. Both increased productivity tremendously, but the benefits were concentrated among a select few.
- You need two aspects for shared prosperity: (1) Technology has to go in a direction that improves workers' productivity. (2) Workers must have a chance to benefit from that marginal productivity. In these two examples it was the coercive structure of the economy that ensured that workers did not benefit, even if they were more productive.
- The early Industrial Revolution's factory system is another example. It led to increased automation while marginal productivity did not improve, and at the same time workers were highly monitored and working conditions worsened.
- **[24:19] Should we prevent harmful innovations? Wrong question**
 - Many economists tend to frame the question as being for or against innovation. However innovation can be redirected. We did not need to have to go through the savages of the early industrial revolution to benefit from industrial technology, nor do we need to follow an agenda of automating everything and sidelining humans.
 - Post-WWII growth is an example of this: there was widespread growth after the war, but in the past 40 years there has been a large earnings divergence between different educational groups.
- **[32:03] How to secure shared prosperity? New tasks and worker power**
 - Paradigmatic case of the U.S. car industry:
 - (1) Electrification and the modern factory boosted marginal worker productivity. New tasks in the production process increased labor demand.
 - (2) The car industry was at the heart of labor organizations, bolstering the share of productivity gains.
 - However the "productivity bandwagon" in the car industry broke down in the 1980s because these two pillars fell:
 - (1) We had too much automation without creating new tasks.
 - (2) But also institutional and ideological changes changed the way we shared the gains. The labor movement was weakened, while Milton Friedman claimed that: "the social responsibility of business is to increase its profits"
- **[40:19] Could AI be different?**
 - Yes. AI has an unparalleled ability to complement knowledge work that could increase worker tasks and productivity.
 - Whoever gains will depend on visions. Two predominant ones on AI:

- (1) The Turing Test vision: AI could imitate and replace humans. Even the term “machine intelligence” pushes us in that direction.
- (2) Instead we should focus on “machine usefulness,” where AI should be a tool for humans. The computer mouse or the internet came out of this vision.
- If we focus on “machine intelligence” too much, the main problem will not just be inequality, we will also not get any productivity gains. This is “so-so automation” ([Acemoglu and Restrepo, 2019](#)).
- Surveillance is also intensifying in both authoritarian and democratic regimes. Centralized control of data will not be good for the future of democracy, and will hurt worker productivity and autonomy
- **[49:26] What can we do?**
 - Change the narrative away from the hubris of techno-optimism. Technology needs to become more pro-human
 - We need to create countervailing powers: (1) labor movement, (2) bottom-up organizations from civil society, (3) appropriate regulation (taxes, antitrust, data, support worker-friendly technology)
 - Focus on “machine usefulness”: redirect technological change towards new tasks for greater worker productivity, better information for workers, greater worker autonomy
 - Social media could have truly democratized information, but we used the path of centralized control, which was then monetized by negative externality activities
 - Our climate efforts show that, even with a small amount of civil society engagement and government policy, we can completely change the face of technology
 - Digital ad taxes would create room for new business models less focused on ads and keeping people engaged, also discouraging the worst users of data.
 - We need to improve the legibility of AI models. We need to understand how they arrived at a certain output to improve workers’ own cognition and skill. How much of chatGPT is coming from Wikipedia, and how much from Reddit?
 - It is not clear that we need big tech. It is the way the market has gone: it has led to huge foundation LLM models, trained on the entire internet, with the goal of dominating the search market. An alternative would have been to have smaller scale models that are more domain-specific, which would have been much more open for many companies to enter. The particular market organization we chose is headed towards duopoly, which would be bad for competition and the direction of technology.

Timestamps:

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[24:19] Should we prevent harmful innovations? Wrong question

[32:03] How can we secure shared prosperity? New tasks and worker power

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[49:26] What can we do?