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Humanity was stagnant for millennia — then something big changed 150 years ago

Why the years from 1870 to 2010 were humanity's most important.

By Dylan Matthews | dylan@vox.com | Sep 7, 2022, 8:00am EDT



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“The 140 years from 1870 to 2010 of the long twentieth century were, I strongly believe, the most consequential years of all humanity’s centuries.”

So argues ***Slouching Towards Utopia: An Economic History of the Twentieth Century***, the new magnum opus from UC Berkeley professor Brad DeLong. It’s a bold claim. Homo sapiens has been around for at **least 300,000 years**; the “long twentieth century” represents 0.05 percent of that history.

But to DeLong, who beyond his academic work is known for **his widely read blog on economics**, something incredible happened in that sliver of time that eluded our species for the other 99.95 percent of our history. Whereas before 1870, technological progress proceeded slowly, if at all, after 1870 it accelerated dramatically. And especially for residents of rich countries, this technological progress brought a world of unprecedented plenty.

DeLong reports that in 1870, an average unskilled male worker living in London could afford 5,000 calories for himself and his family on his daily wages. That was more than the 3,000 calories he could’ve afforded in 1600, a 66 percent increase — progress, to be sure. But by 2010, the same worker could afford 2.4 million calories a day, a nearly *five hundred fold* increase.

DeLong’s book is called *Slouching Towards Utopia*, though, not *Achieving Utopia*. The unprecedentedly fast change in the lives of residents of rich nations brought with it profound political instability and conflict. Perhaps the worst off were residents of the Global South, and oppressed communities like women and racial minorities in the Global North, who were denied much of the benefit of the world’s economic revolutions while suffering the bulk of the harm from the ensuing political and social revolutions.

DeLong and I talked last week about the book, the economic significance of the long 20th century, what caused technological progress to speed up so dramatically, and whether this kind of explosive growth can continue.

A transcript of our conversation, edited for length and clarity, follows.

Dylan Matthews

You argue that 1870 through 2010 were “the most consequential years of all humanity’s centuries.” What’s your case?

Brad DeLong

It really looks that we had as much technological change and progress between 1870 and today as we had between 6000 BC and 1870 AD. We packed what had previously been nearly eight millennia of changes in the underlying technological hardware of society, which required changes in the running sociological code on top of that hardware. To try to pack what had been eight millennia worth of changes before in 150 years is going to produce an awful lot of history.

Before 1870, most of history is how elites run their force-and-fraud, domination-and-extraction mechanism against a poor peasantry so that they, at least, can have enough, and so that their children are only two inches shorter than we are, rather than five or six as the peasants are. It’s about how the elites elbow each other out of the way as they eat from the trough. And it’s about the use they make of their wealth for purposes good and ill, of civilization and destruction.

But if you’re enough of a Marxist, like me, to say that the real motor of history is the forces of production, their changes, and how society reacts for good or ill to changing forces of production, then yes, [1870 to 2010] has to be as consequential because there’s as much technological change-driven history as there is in entire millennia before.

Dylan Matthews

You seem on solid ground in arguing that something radical changed that enabled humans to become dramatically richer over the last 300 years; almost every economic historian would agree with that. But many people start the story in the 18th century, with the development of the steam engine and the beginning of the Industrial Revolution in Britain. You start it in 1870, well after that process was underway.

Why does the story start later for you?

Brad DeLong

When do we start? Let’s start 300 million years ago in the Permian period, when plants die and they get pushed underground and turn into coal. And then we flash forward to 25,000 years ago, when the last glacier episode scrapes all the rock on top of the coal deposits off

of the British Isles and then retreats, leaving Britain with an ungodly amount of surface coal at sea level. Since it's a wet island, it's thereupon very easy to move by water.

You need a steam engine if you want to dig even 10 feet down in order to get out the coal, and then around 1770, the steam engine and textile machinery attained critical mass and the Industrial Revolution begins, which is usually taken as the hinge of economic history, although some people push it back further.

However, you look worldwide and you take my index of technological progress, and it [grows by] less than half a percent per year from 1770 to 1870. That's based on exploitation of really cheap coal and also on the productivity benefits of falling transport costs that gather all of the manufacturing in the world into the place [the United Kingdom] where it's most productive and most efficient, because it's the place where coal is cheapest.

I was struck by a line I came across from the 1871 version of John Stuart Mill's *Principles of Political Economy*: "Hitherto it is questionable if all the mechanical inventions yet made have lightened the day's toll of any human being."

Say you have some slowdown in global technological progress after 1870 because the cheapest coal has already been mined and the deeper coal is hard to find, and say that you have some other slowdown because you don't get the boost from gathering manufacturing in places where it's productive. We might well have wound up right with a steampunk world after 1870: a world with about the population of today, but the living standards of 1870 on average.

That's what the pace of progress was, except that we got the industrial research lab, the modern corporation, and then full globalization around 1870. The industrial research lab rationalized and routinized the discovery and development of technologies; the corporation rationalized and routinized the development and deployment of technologies; and globalization diffused them everywhere.

Dylan Matthews

For most of human history since the advent of agriculture, we were ruled by Malthusian dynamics: If we gained the ability to grow more food, we would simply have more children, meaning no one's quality of life could improve too much. And this, of course, put tremendous pressure on women, who were expected to have many children and do almost all the biological and practical work of gestating and raising them.

You cite a very striking statistic in the book: the average number of years of a woman's life spent either pregnant or breastfeeding. That has gone down dramatically, from 20 years of a typical woman's life in 1870 to four years today. Explain that number to me, and what it means.

Brad DeLong

It's from a book called ***Women's Work: The First 20,000 Years*** by Elizabeth Wayland Barber. We really do not know much about what human life was really like in the hunter-gatherer age. Once we have agriculture, productivity goes way up. Life becomes somewhat boring because our brains are probably built to be hunter-gatherers. Population grows, and living standards fall.

You have this biological situation in which one in seven women appears to die in childbirth; in which [to expect] one son surviving, you need to have two kids survive, which means three reach early adulthood, which means four reach the age of 5, which means seven or so babies born, which means nine advanced pregnancies.

Once you become an undernourished, agrarian Malthusian being, all of a sudden you are biometrically close to being effed completely.

Your children's immune systems are too compromised to fight off the common cold. Maybe you're too skinny to ovulate. If you aren't, maybe you lose two teeth and break an arm as the baby leeches calcium out of your body into itself. Then you add on to that the fact that patriarchy means that if you are female, your only durable source of social power is to have surviving sons. And so any temptation to do much of anything other than have surviving sons, and then have more as insurance, is very hard to resist. Those are the biological, ecological, economic forces tending toward patriarchy, of which men as a group then took absolutely horrible advantage.

And yet once technological progress starts to hit 2 percent per year, then some people begin to have incomes above subsistence and infant mortality falls. But those changes came remarkably quickly.

Dylan Matthews

The highlight of the 140 years you study are the **Thirty Glorious Years**: roughly from 1945 to 1975, as the US and Europe recovered from World War II. They managed to build economies and welfare states that directed substantial benefits to working-class people while sustaining really fast productivity growth. After the 1970s, that regime broke down.

I finished the book thinking, “How can we get back to those 30 years? How do we get fast growth and equitable growth like that again?” But at the same time, many people you might think sympathetic to that vision are instead **questioning the value of economic growth** or **calling for “degrowth”** as a way to manage global warming.

Is it possible to go back to the Thirty Glorious Years? Or do we need degrowth instead?

Brad DeLong

We definitely need to decarbonize. But go back to the steampunk world — suppose that we hadn't had the last acceleration and we're at the 1900 level of technology. We'd be pumping out only about a third or a quarter as much carbon dioxide as we are now, but we'd be pumping out many, many tonloads of other pollutants.

Think of the amount of farmers and farmland that we would have needed in order to support 8 billion people on 1900 technology. Those were days when we'd **send people with pickaxes to islands off of the South Atlantic** to knock tons of bird shit off to try to boost agricultural yields by a little bit.

Degrowth is a mistake because we still have our bottom 500 million [people in global poverty], who certainly deserve much better. We certainly need much better technologies to deal with global warming. But do we indeed have to worry more about how to utilize our wealth, and less about how to produce much more wealth? I would say probably so. The best minds of a generation moving to South of Market in San Francisco to figure out how to scare the shit out of people and glue their eyeballs to screens — that's not a terribly good use of human brainpower.

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