

DRAFT

Slouching Towards Utopia?: An Economic History of the Long Twentieth Century, 1870-2016

I. Introduction: My Grand Narrative

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1.1. The Long 20th Century in Human History

1.1.1. The Grand Narrative

The Long 20th Century began around 1870, when the triple emergence of globalization, the industrial research lab, and the modern corporation in the context of the market economy set the world on the path that pulled it out of the dire poverty that was humanity's lot in all centuries before; and when America took the steps that made it the place where much of the action was—"the furnace where the future is forged", to quote Russian Revolutionary Leon Trotsky.

The Long Twentieth Century ended in 2016, with the sharp shock of the near-return of Great Depression-era macroeconomic conditions, with the failure of the anemic economic recovery from the Great Recession that started in 2008 to bring a restoration of the post-1870 normal pace of productivity growth; and with the election of Donald Trump, an American president hostile to global leadership, to global cooperation, and to the very ideas that America was open to immigrants.

It was, I think, the most consequential single century humanity has had and, hopefully, will have. And it was the first century in which the bulk of history was what I would call *economic*.

Before 1870, over and over again, technology lost its race with human fecundity. Greater numbers coupled with resource scarcity and a slow pace of technological innovation and advance to produce a humanity where most people most of the time could not be confident that in a year they and their families would have their 2000 calories, plus essential nutrients, plus a roof over their heads. Before 1870 those successfully on the make had to do so overwhelmingly focusing on how to take from others and then keep what they had while maintaining order, rather on how to make more for everyone. The ice was breaking before 1870. Between 1770 and 1870 technology and organization gained a step or two or three on fecundity in their race. But only a step or two or three. Any post-1870 slackening of the pace of technological or organizational progress, or any major redivision of society's dividends devoting less to the sinews of peace and more to the sinews of war, and the "nasty, brutish, and short" of previous ages would have reasserted itself. In the early 1870s that British establishment economist, moral philosopher, and bureaucrat John Stuart Mill continued to claim that "it is questionable if all the mechanical inventions yet made have lightened the day's toil of any human being..." Rather, they have "enabled a greater population to live the same life of drudgery and imprisonment..."

The consequences of the 20th century have been enormous: Today less than 9% of humanity lives at or below the roughly \$2-a-day living standard we think of as "extreme poverty", down from 70% or so 1870—and even those 9% have access to public-health and mobile phone-communications technologies of vast worth and power. Today the economies of the world lucky enough to be rich stand at levels of per-capita prosperity at least twenty (and possibly much more) times those of 1870 and at least twenty-five (and possibly much more) times those of 1770, with every expectation of further doublings in the centuries to come. Today the typical citizens of those economies can wield powers—of mobility, of communication, of creation, and of destruction—that approach if they do not surpass in many dimensions those attributed to sorcerers and gods in ages past. Today the center-of-gravity of those economies unlucky and in the "Global South" is not at the \$2-3 a day living standard of those economies in 1800 or 1870, but \$15 a day (and more).

Tell any of those in previous centuries about the wealth, productivity, technology

level, and sophisticated productive organizations of the world today, and they would say that with such power and wealth in our collective hands we must have built a utopia.

And yet full-throated triumphalism cannot survive when we look at the entire Long 20th Century. Why, it cannot survive even a brief look at the political economy of the 2010s: the stepping-back of the United States from its role of good-guy world leader and of Britain from its role as a key piece of Europe, the rise in politics in North America and Europe of movements that rejects democratic representative consensus normal politics in favor of allegiance to leader whose principal qualifications are their desires to strike at external foes and at internal fifth columns who are not proper full members of the ethno-nationalist community—movements Madeleine Albright calls “fascist” (and who am I to tell her she is wrong?)—the conspicuous failure over the previous decade of the stewards of the global economy to either maintain or to rapidly return to full employment.

Yes, over 1870-2016, technology and organization repeatedly lapped fecundity. Yes, then the psychology of a newly richer humanity in which girls learned to read and acquired social power permanently scotched Malthusian forces from their role as the fetters of humanity. But material prosperity is grossly unevenly—criminally—distributed around the globe. And material wealth does not make people happy in a world, at least where politicians and others prosper mightily from finding new ways to make and keep people unhappy. The history of the Long 20th Century cannot be told as a gallop, run, a march, or even a walk of progress along the road that brings us closer to Utopia. It is, rather, a slouch. At best.

Even a continuation of the slouch is not guaranteed. This book will appear ludicrously stupid if the next century sees a major thermonuclear war. This book will appear ludicrously short-sighted if uncertainty about the effects of global warming—no, I am not going to call it “climate change”—turns out to really be not-our-friend, and over the next 200 years we cook our planet.

1.1.2. Should We Tell Grand Narratives?

Many may complain that the Grand Narrative of this book is much too simple. History is never one story. And history’s stories do not have one single thread. There have been too many Grand Narratives over the past four centuries. They all say—or heavily imply—that one big thing happened, it is over (or about to be over), and that we clearly know what it means. But go down the road fifty years after anyone has written a Big History with a Grand Narrative, and we find that,

no, they did not know what it meant; or we find that it was not the end but only the middle of the story; or we find that there were other, more important stories, burbling along that we should have paid more attention to—and that we would have paid more attention to, had we not been busy cramming everything and everyone into the Procrustean bed of the grand narrative.

Pounding history into a Procrustean Bed of a narrative is fuzzy thought that leads to bad judgments.

Nevertheless, we have to tell Grand Narratives if we are to think at all. We think in narratives: stories are how we make sense, and how we remember. And our thought is fuzzy. Grand Narratives are, in Ludwig Wittgenstein's words, "nonsense"—as is all human thought. But our fuzzy thoughts are the only ways we can think—the only ways we have to climb up. Then if we are lucky one can, as Wittgenstein says, "recognize... them as nonsensical, when [one] has used them—as steps—to climb beyond them... [and then] throw[n] away the ladder after [one] has climbed.... Transcend these propositions, and then... see the world aright".

We use the conventions of narrative to shape the orders in which we put things in history because we are story-telling animals. We choose the central themes the things that we do because they are the overlapping set of things both of interest to us and making a difference for people's lives.

I think this Grand Narrative I have chosen is the best and most important one to tell about the world of our parents, grandparents, great-grandparents, and great-great-grand parents.

1.2. Desperate Poverty in the Agrarian Age

Humans have always been inventive as long as there have been humans.

Technological advance has rarely stopped. The windmills, dikes, fields, crops, and animals of Holland in 1700 made the economy of its countryside very different indeed from the thinly-farmed marshes of 700. The ships that docked at the Chinese port of Canton had much greater range and the commodities loaded on and off them had much greater value in 1700 than in 800. And both commerce and agriculture in 800 was far advanced in its technology beyond that of the first civilizations to have literacy of -3000 or so.

But before our age, back in the pre-industrial Agrarian-Age, technological progress

led to little visible change over one or even several lifetimes; and little growth in typical living standards even over centuries or millennia.

We can heroically construct an index of the value of the stock of useful human ideas about manipulating nature and organizing human effort—an index of our “technology” as economists call it. Assume that each 1% increase in typical human standards of living worldwide at a constant global population tells us that the value of the useful ideas stock has risen by 1%. Assume that each 1% increase in the human population at a constant typical living standard tells us that the value of the useful ideas stock has risen by $\frac{1}{2}\%$ —for such an increase is necessary to hold living standards constant in the face of the smaller average farm sizes and other Malthusian *per capita* resource scarcities that emerge from a higher population. (Where does the $\frac{1}{2}$ come from? It is a heroic guess: a judgment that natural resources are, in the average and over time, roughly half as important as human brains, eyes, hands, and muscles in boosting production.) Set that index of the quantitative index of the global value of useful human knowledge equal to a value of 1 back in the year -8000 years ago, at the beginning of the Agrarian Age. Then by our current calendar's year 1 this value index stood at 3.5. By the year 1500 it stood at 4.7: given similar resources, because of more knowledge about how to use nature and organize humans, one worker in the year 1500 could produce things of the value it would have taken 4.7 typical workers of 8000 BC to produce.

This is an impressive change. And, indeed, from the standpoint of -8000—possibly able to make felt but not to spin or weave, and probably not yet reliably able to turn barley porridge into beer—the technologies of the year 1500, the Ming pottery or the Portuguese caravel or the wet-cultivation rice seedling, are very impressive. But this growth took enormous spans of time for the invention. And so the pace was very slow: 0.02% per year for the entire span years from 1 to 1500—that is only 0.5% over an average 25-year lifetime of that age.

And did greater knowledge about technology and human organization surely led life in 1500 to be much sweeter than it had been in the year 1? It turns out not. The human population grew at an average rate of 0.06% per year from 1 to 1500. While while the elite lived far better in 1500, typical human peasants and craftsmen lived little or no better than their predecessors.

Agrarian Age humans were desperately poor: a subsistence-level society. On average 2.03 children per mother survived to reproduce. A typical woman (who was not in the $\frac{1}{7}$ who died in childbirth or the additional $\frac{1}{5}$ who died before her children were grown) spent perhaps 20 years eating for two: nine pregnancies, six

live births, three children surviving to age five, and the life expectancy at birth of her children under and perhaps well under 30. Keeping your children from dying is the first and highest goal of every parent. Humanity in the Agrarian Age could not do so. That is an index of how much pressure from material want humanity found itself under.

Over the millennia 1.5% average population growth per generation added up. There were about three times as many people in 1500 as in the year 1: 500 million rather than 170 million. But the extra technological and organizational knowledge as of 1500 went to compensate for the fewer natural resources *per capita* at our disposal. Thus the *economic* remained a slowly-changing background in front of which history—cultural, political, social—took place.

The ice started to break after 1500. The pace of inventions and innovation sped up. We call the century before 1870 the “Industrial Revolution” for a reason. By 1870 our heroic-assumptions index of the value of knowledge stood at 16: more than three times its value of 1500. But there were then 1.3 billion people alive, and so farm sizes were only $\frac{2}{3}$ as large as they had been in 1500. The bulk of the human population was still in or on the edge of the extreme poverty—living on \$2 a day or less—that the United Nations Millennium Development Project hoped to banish from the world.

1.3. The Explosion of Wealth

It was in the Long 20th Century that there came explosion. Our 7.6 billion people today have a global value of knowledge index of 420. The value of knowledge about technology and organization grew at an average rate of 2.3% per year. Since 1870, the technological capability and material wealth of humankind has exploded beyond previous imagining. Today the typical human family no longer faces as its most urgent and important problem how to acquire for the next year—or the next week—enough food that they were not desperately hungry, enough shelter that they were not wet, and enough clothing (in climates far from the equator at least) that they were not cold.

From the technological-sociological angle, 1870-2016 was primarily the age of the industrial research lab, the associated communities of engineering practice that supercharged economic growth, and the increasing size and competence of the bureaucratic corporations that deployed the fruits of invention. It was only slightly less the age of globalization: cheap ocean and rail transport that destroyed distance

as a cost factor, of those plus the human desire and ability to cross oceans in enormous numbers to seek better lives, and of submarine and land telegraph and later other communications links that allowed us to talk across the world in real time.

Those powered the wave of discovery, invention, innovation, deployment, and then global economic integration that has boosted our global useful-economic-knowledge index from 16 to 420. In 1870 the daily wages of an unskilled male worker in London, the city then at the forefront of world economic growth and development, would buy him and his family about 5,000 calories worth of bread each. That was progress: in 1800 the daily wages would have bought him and his family perhaps 4000 calories, and in 1600 some 3000 calories. Today the daily wages of an unskilled male worker in London would buy him 2,400,000 wheat calories: nearly 500 times as much.

From the biological-social angle, the wealth creation process of 1870-2016 drove it to be *the* century in which it ceased to be the case that the typical woman spent twenty years eating for two—pregnant or breastfeeding. Today, it is more like four years. And it was the century in which we stopped watching more than half our babies die in miscarriages, stillbirths, and infant mortality—and stopped watching more than a tenth of mothers die in childbed.

From the international political-economic angle, that wealth creation and distribution process drove four things, of which the first was by far most important:

1. It made 1870-2016 the century in which the United States of America was a superpower, a hyperpower, a *hegemon*
2. It made a world primarily of nations rather than of empires.
3. It made an economy with a center of gravity consisting of large oligopolistic firms ringmastering value chains, rather than of either small atomistic perfect competition or direct state control.
4. It made a world in which political orders would be primarily legitimated, at least notionally, by elections with universal suffrage—rather than the claims of plutocracy, tradition, “fitness”, leadership charisma (usually in the service of the exaltation of a particular largely-fictitious *ethnos*), or knowledge of a secret key to historical destiny.

1.4. Was It Foreordained?

1.4.1. Was It Foreseen?

Yet as of 1870 such an explosion was not foreseen, or not foreseen by many. Yes, 1770-1870 did see, for the first time, productive capability begin to outrun population growth and natural resource scarcity. By the last quarter of the nineteenth century, the average inhabitant of a leading economies—a Briton, a Belgian, a Dutchman, an American, a Canadian, or an Australian—had perhaps twice the material wealth and standard of living of the typical inhabitant of a pre-industrial economy.

Yet was that enough to be a true watershed?

1.4.2. John Stuart Mill

Back in the early 1870s John Stuart Mill, Britain's leading economist, moral philosopher, public intellectual, feminist activist (arrested for distributing birth control leaflets in the streets of London), and imperialist rulers of the empire, put the finishing touches on the final edition of *the* book that people then looked to to learn economics: *Principles of Political Economy, with Some of Their Applications to Social Philosophy*. His book gave due attention and place to the 1730-1870 era of the British Industrial Revolution. But he looked out on what he saw around him, and saw the world still poor and miserable. "Hitherto", he wrote, looking at the world and at the Great Britain and Ireland of his day:

it is questionable if all the mechanical inventions yet made have lightened the day's toil of any human being. They have enabled a greater population to live the same life of drudgery and imprisonment, and an increased number of manufacturers and others to make fortunes. They have increased the comforts of the middle classes...

Denser populations, more and richer plutocrats, a larger middle class—those were the fruits Mill saw of the 1720-1870 Industrial Revolution. Humans in 1870 were still under the harrow of Malthus. Whatever possibilities for a better world had existed in the womb of better technology over 1720-1870 had been stillborn.

One word in Mill's paragraph stands out to me: *imprisonment*.

The world Mill saw as of 1871 was not just a world of drudgery—a world in which humans had to work long and tiring hours at crafts and tasks that came nowhere near to being sufficiently interesting to engage the full brainpower of an East African Plains Ape. The world Mill saw was not just a world in which most people

were close to the edge of being desperately hungry, and were justifiably anxious about where their 2000 calories a day were going to come from next year—or next week. The world Mill saw was not just a world of low literacy—where most could only access the collective human store of knowledge, ideas, and entertainments partially and slowly. The world Mill saw was a world in which humanity was *imprisoned*: not free, in a dungeon, chained and fettered. And Mill saw only one way out: if the government were to take control of human fecundity and require child licenses, prohibiting those who could not properly support and educate their children from reproducing, only then—or was he thinking “if”?—would mechanical inventions wreak the “great changes in human destiny, which it is in their nature and in their futurity to accomplish”.

1.4.3. Karl Marx and Friedrich Engels

There were others who were more optimistic: Karl Marx and Friedrich Engels had in 1848 already seen science and technology as Promethean forces that would allow humanity to overthrow its (mythical) old gods and give humanity itself the power of a god. Science, technology, and the profit-seeking entrepreneurial business class that deployed it had:

during its rule of scarce one hundred years, has created more massive and more colossal productive forces than have all preceding generations together. Subjection of Nature's forces to man, machinery, application of chemistry to industry and agriculture, steam-navigation, railways, electric telegraphs, clearing of whole continents for cultivation, canalisation of rivers, whole populations conjured out of the ground—what earlier century had even a presentiment that such productive forces slumbered in the lap of social labour?...

Engels snarked that in their overlooking of the power of science, technology, and engineering mere economists (like Mill) had demonstrated that they were simply the paid hacks of the rich:

Land, capital and labour are for him the conditions of wealth, and he requires nothing else. Science is no concern of his. What does it matter to him that he has received its gifts through Berthollet, Davy, Liebig, Watt, Cartwright, etc.—gifts which have benefited him and his production immeasurably? He does not know how to calculate such things; the advances of science go beyond his figures. But in a rational order... the mental element certainly belongs among the elements of production and will find its place, too...

And Marx's few and thin descriptions in works like his *Critique of the Gotha*

Program of life after the socialist revolution he foresaw as inevitable and then the drive to a “higher phase of communist society” echo—deliberately, but with what authorial intent?—the descriptions of how people who have attained the Kingdom of Heaven behave: each will contribute “according to his ability” (*Acts of the Apostles*: 11:29) and each will draw on the common, abundant store “according to his needs” (*Acts of the Apostles* 4:35).

And there were others who were much more pessimistic than even Mill. In 1865 then 30-year old British economist William Stanley Jevons made his reputation by prophesying doom for the British economy: it needed to start, immediately, cutting back on industrial production in order to economize on scarce and increasingly valuable coal.

No, it was not foreordained: if it was, it would have been more broadly foreseen.

1.5. What Has It Meant?

1.5.1. Changing Patterns of Life

The explosive amplification of material wealth has carried with it not just quantitative changes in what we consume but quantitative changes in how we live. Who today could find their way around a kitchen of a century ago? Before the coming of the electric current and the automatic washing machine, doing the laundry was not an annoying but minor chore but was instead a major part of the household’s—or rather the household’s women’s—week. Today few among us are gatherers, or hunters, or farmers. Hunting, gathering, farming, herding, spinning and weaving, cleaning, digging, smelting metal and shaping wood, assembling structures by hand—those are now the occupations of a small and dwindling proportion of humans. And where we do have farmers, herdsmen, manufacturing workers, construction workers, and miners, they are overwhelmingly controllers of machines and increasingly programmers of robots. They are no longer people who make or shape things—*facture*—with their hands—*manu*.

What do modern people do instead? Increasingly, we push forward the body of technological and scientific knowledge. We educate each other. We doctor and nurse each other. We care for our young and the old. We entertain each other. We provide other services for each other to take advantage of the benefits of specialization. And we engage in complicated symbolic interactions that have the emergent effect of distributing status and power and coordinating the 7.4-billion

person division of labor of today's economy. We have crossed a great divide between what we used to do in all previous human history, and what we do now.

We today are not just better at making the goods of a century ago. We today also have the new and powerful technological capability to make an enormously expanded range of goods and services: from streaming entertainment services—the audio and videocassettes, CDs, and DVDs which wowed us less than one generation ago are now obsolete—and antibiotics to airplane flights and plastic bottles. We today would feel—we would be—enormously impoverished if by some mischance our money incomes and the prices of commodities remained the same, but if we were at the same time forbidden to use any commodity not produced in 1870. This expansion in the range of what we can produce is an enormous additional multiplier of material well-being.

The magnitude of the growth in material wealth has been so great as to make it nearly impossible to think about measuring.

1.5.2 Achieving the “Limit of Human Felicity”

Perhaps the third best selling novel in the United States in the entire 19th Century was *Looking Backward, 2000-1887*, by Edward Bellamy. Bellamy was a populist and—although he rejected the name—a socialist: he dreamed of a utopia created by government ownership of industry, the elimination of destructive competition, and the altruistic mobilization of human energies in a way analogous to his vision of the North's collective effort to end slavery in the Civil War. Technological and organizational abundance would then generate a society of abundance. He therefore wrote a “literary fantasy, a fairy tale of social felicity” as a “hanging in mid-air, far out of reach of the sordid and material world of the present... cloud-palace for an ideal humanity”.

He throws his narrator-protagonist forward in time from 1887 to 2000 to marvel at a well-working rich society. At one point the narrator-protagonist hears the question, “Would you like to hear some music?” He expects his hostess to play the piano—a social accomplishment of upper-class women around 1900. To listen to music on demand then, you had to have—in your house or nearby—an instrument, and someone trained to play it. It would have cost the average worker some 2400 hours, roughly a year at a 50-hour workweek, to earn the money to buy a high-quality piano. Then there would be the expense and the time committed to piano lessons.

Today? To listen to music-on-demand in your home—or, indeed not in your home but wherever you happen to be? The labor-time value of a Steinway piano may have only halved when measured in average worker-hours. But if what you value is not the piano itself but the capability of listening to music at home, the cost has fallen from 2400 average worker-hours a century ago to... what? What share of the cost of buying and operating our smartphones do we allocate to granting us the capability of listening to music on demand? 1/5? That gets us down from 2400 average worker-hours to 2.

So when we calculate the increase in material wealth, should we count the halving of the labor-time price of the commodity which is the Steinway piano? Or should we count the 1200-fold decrease in the real labor-time price of the capability of listening to piano (and all other kinds of) music? I think it is clear that we should do the second.

Bellamy's narrator-protagonist answers "yes" to the question "would you like to hear some music?" But his hostess does not then sit down at the pianoforte to amuse him and exhibit her ladylike domestic accomplishments. Instead, Bellamy's narrator-protagonist is stupefied to find his hostess "merely touched one or two screws," and immediately the room was "filled with music; filled, not flooded, for, by some means, the volume of melody had been perfectly graduated to the size of the apartment. 'Grand!' I cried. 'Bach must be at the keys of that organ; but where is the organ?'"

He learns that his host has dialed up, on her telephone landline, a live local orchestra playing in the city, and she has put it on the speakerphone. In Bellamy's utopia, you see, you can dial up a local orchestra and listen to it play live.

Moreover, you have a choice: you can dial up one of four orchestras currently playing.

Bellamy's narrator's reaction?

If we [in the nineteenth century] could have devised an arrangement for providing everybody with music in their homes, perfect in quality, unlimited in quantity, suited to every mood, and beginning and ceasing at will, we should have considered the limit of human felicity already attained...

1.5.3. Slouching Towards Utopia?

Think of that: *the limit of human felicity*.

Many technological inventions of the past century have transformed experiences that were rare and valued luxuries—available only to a rich few at great expense at relatively rare performances of the symphony or the opera—into features of modern life that we take so much for granted that they would not make the top twenty or even the top 100 in an ordered list of what we think our wealth consists of us. If Edward Bellamy could see us, he might see us like we would see a civilization in which everyone had courtside Golden State Warriors tickets on the refrigerator door for anyone wandering by to use, or a basement filled with boxes upon boxes of gem-quality diamonds or *premier cru* wines or designer dresses or Tesla Roadsters, all largely ignored because no one could find a use for them or thought of them as in any way very interesting.

If you asked Edward Bellamy—or any other nineteenth-century or earlier sketcher of utopias—whether we here today have the knowledge of technology and of productive organization needed to provide at least the material abundance needed to build a utopia, they would all say “of course”. And they would in turn ask of us why we do not recognize that those of us in the middle and upper classes of the industrial economies have, in material well-being at least, reached or gone well beyond what they would have regarded as *the limit of human felicity*.

We today—even the richest of us—rarely see ourselves as so extraordinarily lucky and fortunate and happy even though *for the first time in human history there is more than enough*. There are enough calories that it is not necessary that anybody need be hungry. There is enough shelter that it is not necessary that anybody need be wet. There is enough clothing that it is not necessary that anybody need be cold. And enough stuff to aid daily life that nobody need feel under the pressure of lack of something necessary. We are no longer in anything that we could call “the realm of necessity”. So one would think we humans ought to be in “the realm of freedom”: something that is and that we recognize as a Utopia.

Why aren’t we there yet?