

DEIRDRE NANSEN MCCLOSKEY    ALBERTO MINGARDI

THE  
**MYTH**

— OF THE —  
ENTREPRENEURIAL  
**STATE**



ADAM SMITH  
INSTITUTE

#### 4.

### THE GREAT ENRICHMENT CAME NOT FROM THE STATE BUT FROM LIBERTY

The enriched modern economy was not, however, a product of State coercion, whether difficult or easy. It was a product of the happy chances of a change in political and social rhetoric in northwestern Europe from 1517 to 1789. People—regular people, the hobbits of the Shire and not the almighty warriors from afar—began to perceive themselves in a new and dignified light (*Aufklärung*), and, crucially, came to feel their artisanal and commercial undertakings to be more appreciated socially. They were permitted to “have a go,” as the British say, and proceeded then to innovate on a massive scale. To the east and south of Britain and Holland at the time a myriad of statist rigidities remained the norm, and innovation stagnated. Astoundingly, and for the first time in any large society, the local accidents around the North Sea from 1517-1789 led to a liberal polity and economy, and the Great Enrichment. Not by way of the State’s lawyers but by way of the economy’s businesspeople, cheered on by Voltaire, Hume, Johnson, Smith, Paine, Wollstonecraft, Say, and Constant.

You will, if you are a statist, reply confidently, and even indignantly, that on the contrary it was the State that made us Great, and Rich. No, it did not. True, the Great Enrichment in the economy occurred roughly at the same time the nation State arose in Europe, give or take

a couple of centuries. But nation States, and their local subsidiaries, have mainly obstructed innovation, in aid of existing interests. Of course. They have financed innovation occasionally, though often prematurely, and usually also in aid of existing interests against the public interest. Thus the City Council of St. Louis, in aid of existing ferry companies, encumbered the construction in 1874 by the Illinois and St. Louis Bridge Company of the Eads Bridge across the Mississippi. And so in thousands upon thousands of instances. Of course. Every adult knows it, though, among others, our dear friends far to the left who admire Cuba and North Korea and Venezuela stoutly resist the sad facts of political economy. They resist actual history in favor of the theoretical claims of historical materialism. Yet the facts have turned out as follows: Statism on the whole impoverishes. Liberalism on the whole enriches.

Two centuries ago, an entirely new politics was born. Tentatively in the 18<sup>th</sup> century, at first exclusively in northwestern Europe and its offshoots, the new philosophy of liberalism began to speak in earnest of political egalitarianism and adult empowerment. It was a curious result of a long series of liberating accidents, after 1517 in Luther's theses, after 1568 in the Dutch Revolt, after 1642 in the English Civil War, after 1688 and 1776 and 1789 in the English and American and French revolutions. The word "liberal" derives, of course, from Latin *liber*, meaning, reports the *Oxford Latin Dictionary*, "possessing the social and legal status of a free man (as opp. to slave)," that is, as opposed to having a human overlord empowered with physical coercion. Under true liberalism, no adult is to be treated as a slave or a child, in theory at any rate, a theory slowly and unevenly implemented. In the 19<sup>th</sup> century a European asked a free American man who his master was. He replied, "He ain't been born yet." In 1935 the African-American

poet Langston Hughes, admittedly no 19<sup>th</sup>-century liberal, expressed the core of liberalism well: "O, let America be America again— / The land that never has been yet— / And yet must be—the land where every man is free."

Liberalism flowered in the seventy-five years after 1776—as much from the liberal theory, with factual illustrations, published on March 9 of that famous year, *An Inquiry into the Nature and Causes of the Wealth of Nations*, as from the practical consequences of the soaring rhetoric, published on July 4, penned by a slave owner in the opening lines of *The Declaration of Independence*. Such ideas led gradually in more and more places to the liberation of a reformed electorate, then liberty in the UK and the US for improvers and entrepreneurs, then liberty for Catholics and Jews and other nonconformists, then freed slaves in the British Empire and serfs in far Russia, and then gradually others, such as women and poor men and immigrants and imperial subjects and gays. It was well said that in the 18<sup>th</sup> century kings had rights and women had none; now it's the other way around. The emancipations were often confined to the economy, as in Bismarck's Germany or in China since 1978. The people sacrificed their political liberty more or less gladly in exchange for their economic liberty. In the better cases, such as quasi-liberal but top-down unified Italy before the fascist era, or Chile through more of its history than many realize, and especially in the heartland of liberalism in the Anglosphere, the emancipation was achieved in both the economy and the polity.

The emancipation, partial though it was, caused after 1800 a tsunami of innovations, still washing over the world. The usual explanations for



the tsunami are mistaken.<sup>32</sup> It was not expanded foreign trade or accumulated capital or splendid public works or the exploitation of slaves and workers, or even high science, that caused in the past two centuries what can only be called the “Great Enrichment.” The Enrichment greatly exceeded the oft-praised (or damned), but in truth somewhat routine, Industrial Revolution of 1760-1860. Had the enrichment ceased in 1860 the world would still be wretchedly poor. In 1844 a French official reported of the vineyard men of Burgundy that over the winter “these vigorous men will now spend their days in bed, packing their bodies tightly together in order to stay warm and to eat less food.”<sup>33</sup> Yet remarkably the enrichment did not cease, but redoubled and redoubled and redoubled yet again.

The Great Enrichment, that is, came from human ingenuity emancipated. Ordinary people, emboldened by liberalism, ventured on extraordinary projects—the marine chronometer, the selective breeding of cotton seed, the band saw, a new chemistry, or merely venturing boldly to a new job, or to the New World, or going west, young man. And, crucially, the bold adventurers, in parallel with liberations in science, in music, in geographical exploration, came to be tolerated and even commended by the rest of the society, first in Holland in the 17<sup>th</sup> century and then in Britain in the 18<sup>th</sup>. That is, ethical ideas about other people changed—for reasons one can trace in the liberal accidents of the two centuries up to 1789 in northwestern Europe—and caused the modern world. The novelties thus encouraged by liberalism

32 The case is made in full in Deirdre N. McCloskey, *Bourgeois Dignity: Why Economics Can't Explain the Modern World*, Chicago: University of Chicago Press, 2010.

33 Graham Robb, *The Discovery of France: A Historical Geography*, New York: Norton, 2007, p. 78.

began to raise living standards, at first in Britain doubling from 1760 to 1860, but at length raising Britain, and then the world, onto a level never yet seen, or anticipated.

You will ask, being a proper skeptic, what level “never seen, or anticipated?” We answer, along with all competent students of the matter: the Great Enrichment from 1800 to the present raised real income in a rapidly expanding number of countries by a factor of 10 or 30 or 100. And contrary to present-day hobgoblins described on TV and in newspapers, and calling *il popolo* to arms, it shows no sign of slowing, worldwide. It was stunning.

It's not a factor of 1.5 or 2.0, understand—that is, not 50 percent or 100 percent, which had happened before, here and there, such as in the classic Industrial Revolution. Earlier efflorescences, as the historical sociologist Jack Goldstone calls them, had always reverted to the miserable base of 1.0.<sup>34</sup> The base in 1800 worldwide was, expressed in present-day prices, an appalling \$2 or \$3 a day per person, which had been the human and Malthusian fate since the caves. Imagine living in Milan or Chicago on \$3 a day. In Sudan and Ecuador, many still do. Yet by now in places like Finland or Japan, once unspeakably poor, people make and consume in the same prices of \$100 a day, and higher. The rise, that is, has been in the liberal nations a stunning 3,000 percent at the least—or if one allows properly for improvements in quality, such as better medicine and better housing,<sup>35</sup> more like 10,000 percent. A factor of one hundred. Goodness.

34 Jack A. Goldstone, “Efflorescences and Economic Growth in World History: Rethinking the ‘Rise of the West’ and the Industrial Revolution,” *Journal of World History* 13 (2), Fall, 2002, pp. 323-389.

35 And for that matter, better economics.



And the poor have benefited the most. A rise of 3,000 percent, not to speak of 10,000, blots out the important gaps in real comfort between peasant and aristocrat, gaps which before 1800 ruled the world. Inequality was greatly reduced by liberal “innovism” (the word is much more to the point than the hugely misleading word “capitalism”). The rich woman got another diamond bracelet. The poor woman got enough to eat. In 1800 in northern Europe, only rich people could eat oranges, grown in the well-named orangeries back in the hot houses of their ample homes. Now oranges appear on the breakfast tables of the poor, and scurvy is banished. Half of national income in medieval Europe went to owners of land. Now it is one twentieth. Contrary to recent pessimisms, from Thomas Piketty to Robert Gordon, with their encouragement to statist and populist panics and policies, growth will continue.<sup>36</sup> In the next half century or so, liberal innovism—not State planning—bids fair to raise up the wretched of the earth.

Here for some representative places are the rough summary numbers, about which all students of the matter pretty much agree, with the factors of growth over the last two centuries, the implied total percentage changes,<sup>37</sup> and the implied annual rates of growth.<sup>38</sup>

36 See Thomas Piketty, *Capital in the Twenty-First Century*, Cambridge and New York: Belknap Press of Harvard University Press, 2013; Robert Gordon, *The Rise and Fall of American Growth: The U.S. Standard of Living Since the Civil War*, Princeton: Princeton University Press, 2017.

37 For such crudely measured facts they are overly precisely calculated.

38 The source is the pioneering work by Angus Maddison, carried on in the magnificent Maddison Project.

### Rough Figures of Inflation-adjusted Per Person Growth 1800-Today<sup>39</sup>

Place	Real income:		Changes:		
	1800	Today	Factor	% Rise	Annual
US	\$6	\$130	22	2,100%	1.55%
UK, Holland	\$6	\$100	16.5	1,550%	1.40%
Japan, et al.	\$2	\$100	50	4,900%	2.00%
World, Brazil	\$2	\$33	16.5	1,550%	1.40%

Observe that even when the average includes the still very poor countries, such as North Korea (unlike its sibling to the south) or Zimbabwe (formerly the richest country in sub-Saharan Africa) or Cuba (having no growth since 1959), with tyrants squatting on them like toads, or with demented theories driving them mad, the rise has been a factor of 16.5 worldwide, itself startling. Doublings, 100 percent rises, were rare but not, we just said, unprecedented in olden times, such as in Rome under the Antonine emperors (who governed, Gibbon maintained, with absolute power but “under the guidance of wisdom and virtue”), or in China during the Song dynasty. But rises of 1,550 percent, not to speak of 4,900 percent, never.

The Great Enrichment is the second most important secular event in human history.<sup>40</sup> The growth rates of 1.4 or 2.0 percent since 1800

39 Source: Angus Maddison’s figures, corrected by the magnificent Maddison Project in his honor.

40 The domestication of animals and especially of plants was the first, yielding cities and literacy, if also lordly tyranny.

sound small. But compounded year on year over a century or two they have been transformative. Something growing at 2 percent a year will in a century increase by a factor of about eight. On present expectations by the World Bank, the recent level of 2 percent per year growth of real income per head worldwide (COVID-19 excepted) will in a few generations, provided the virus and pollution and especially war and tyranny do not intervene, bring everyone on the planet to a level of prosperity well above that enjoyed now in Western Europe.

## 5.

## “DRIVING” FROM THE TOP IS NOT ITS EXPLANATION

Such is the proper explicandum of any serious economics, that inquiry into the nature and causes of the wealth of nations. Many—though thankfully not Mazzucato—seem to consider the Great Enrichment a given, a backdrop, naturalized, as night follows day. They therefore do not acknowledge the startling creativity of the innovism that made it. Their insouciance accounts for many a bizarre misconception about growth, from Marx’s belief that the original accumulation from piracy explains it, down to modern economic modelers positing a *deus ex machina* of suddenly appearing economies of scale.

Mazzucato wisely places great emphasis upon innovation. We approve. It is innovation, she agrees—betterments of technique, whether mechanical or biological or organizational—that enriched the world. It was steam engines, cheap steel, the modern university, the assembly line, artificial fertilizers, containerization, the pill, Wikipedia. It was *not*, that is, either of the two leading candidates in rightist and leftist accounts—neither the saving and investment supposed by the political right to be causal, nor the imperialism and exploitation supposed by the political left. A garbled version of both, such as swims in the minds of most people, was given in a spoof of English history by Sellar and Yeatman in 1930: “During these [Napoleonic] Wars many very

use of galvanized iron in the roofs of huts in *favelas*.<sup>65</sup> It's tinkering, in this case literally. It has nothing to do with a Ministry of Innovation.

<sup>65</sup> David Edgerton, *The Shock of the Old: Technology and Global History since 1900*, Oxford: Oxford University Press, 2007, p. 41.

## 7.

## ECONOMIC HISTORY REJECTS MAZZUCATO'S HYPOTHESIS

In the 19<sup>th</sup> century—or, for that matter, in developing countries today, in which the economy is hardly rich enough to fund a big, intrusive State—the Great Enrichment was fueled by innovations mainly independent of public investments. The Enrichment emerged in Britain first, and government spending there was, until well into the 20<sup>th</sup> century, focused on the defense of the realm, the protection of the sea routes to India, and the servicing the debt contracted to defeat at last the French.<sup>66</sup> As the economic historian Joel Mokyr puts it, “any policy objective aimed deliberately at promoting long-run economic growth would be hard to document in Britain before and during the Industrial Revolution . . . . In Britain the public sector by and large eschewed any entrepreneurial activity.”<sup>67</sup>

Examples abound of investments and innovations sponsored by the State that notably *reduced* national income below what it would have been had the government relented. The leading example is the State's

<sup>66</sup> Ronald M. Hartwell, “Taxation in England during the Industrial Revolution,” *Cato Journal* 1, 1981, pp. 129-153.

<sup>67</sup> Joel Mokyr, “Editor's Introduction: The New Economic History and the Industrial Revolution,” in *The British Industrial Revolution: An Economic Perspective*, Boulder, CO: Westview Press, 1999, p. 46.



chief project, war. Some economic historians write in praise of war as a stimulus to innovation, and some of Mazzucato's recent instances of innovation are of this character. The Cold War is said to have had desirable spinoffs. In those happy days, she writes, "the Pentagon worked closely with other national security agencies like the Atomic Energy Commission and NASA. The interagency collaboration led to the development of technologies such as computers, jet planes, civilian nuclear energy, lasers and biotechnologies."<sup>68</sup>

The war-is-good-for-you theme is implausible on its face. After all, the purpose of war is to throw away people and their efforts to acquire swords and guns and airplanes in order to kill other people, and often enough one's own people, as in Assad's Syria. True, techniques of precision boring of cannons were available to make precision cylinders for steam engines. And Henry Maudslay (1771-1831), who invented machinery for the mass production of screws and bolts, began work at age 12 filling cartridges at the Royal Arsenal, becoming then a blacksmith there, and by age 18 a locksmith. Thus the spinoffs from war. But the relevant question is what would have happened, to cylinders and to Maudslay, without war. The Thirty Years War, killing a third of the German people, did not lead to German excellence in steam and steel.

On this score the contrast between British and French engineers in the 18<sup>th</sup> century is illuminating. In France the engineers came from the younger sons of its large nobility, such as Napoléon, who was educated as befitted a (very minor, Italian-speaking, Corsican) nobleman for a

military career, in the artillery, where he learned to calculate.<sup>69</sup> The historian Margaret Jacob notes that "the civil engineer [of bridges and roads] emerged in Britain by 1750; his French counterpart was a military man. . . . standing aloof from the entrepreneur."<sup>70</sup> From 1747 a French engineer born into the lower part of the Second Estate could matriculate at the newly established state school, *École nationale des ponts en chaussées*, and go on to a career in service to *l'État*. In Britain at the time by contrast a promising lad from the Third Estate, or indeed from the working-class part of it, could become a bourgeois master of new machines and of new companies, as an engineer or an entrepreneur. Or at least he could do pretty well as a clockmaker or a spinning-machine mechanic. In Britain and its offshoots the career of the enterprising bourgeois or the skilled worker was open to talent, as it was in Napoléon's army or Nelson's navy. The British working man carried the baton of a field marshal of industry in his rucksack.

John Harrison (1693-1776), the inventor of the marine chronometer, which solved by spring and gears the problem of finding latitude in the wideness of the sea, contrary to the desire of the elite that it be solved in the heavens by elite astronomy, was a rural Lincolnshire carpenter. His first clock was made of wood.<sup>71</sup> In Britain the Industrial Revolution, greatly exceeded in later years by the Great Enrichment, was an age of

69 Margaret C. Jacob, *The First Knowledge Economy: Human Capital and the European Economy, 1750-1850*, New York: Cambridge, 2014, p. 148.

70 Margaret C. Jacob, *Scientific Culture and the Making of the Industrial West*, New York: Oxford University Press, 1997, p. 71.

71 On Harrison: Dava Sobel, *Longitude: The True Story of a Lone Genius who Solved the Greatest Scientific Problem of his Time*, New York: Walker & Co., 1995.

68 Mazzucato, *The Entrepreneurial State*, p. 74.

inventors, most of whom “were of rather modest, artisanal origin.”<sup>72</sup> They were neither university professors nor government officials, but businesspeople. The British journalist and economist Thomas Hodgskin commented in 1824 of the recently deceased James Watt of steam engine fame that “he was not bred a philosopher but a man of business, having his way to make in the world; and it deserves to be remarked that the guiding motive for his exertions was a clear view of his own interest.”<sup>73</sup>

Had James Watt been born in central Europe, he would have worn livery, as the great composer Franz Joseph Haydn did at the Esterhazy court. In France, any comparable inventor was put under supervision of a centralized bureaucracy in Paris authorizing all projects, down to the local water mill. An heroic engineer/entrepreneur such as Isambard Kingdom Brunel (1806-1859; British born but the son of an exile from France) would not have triumphed in the land of his father. True, Brunel went back to France for secondary school, to get the calculus. But he took the rest of his education from the private school of British commercial practice and public spirit.

Aside from war, the 19<sup>th</sup>-century examples of Mazzucato’s argument for State entrepreneurship would include prominently what were called in the US “internal improvements.” The phrase has a resonance in American politics during and after the Age of Jackson 1829-1837 similar to the word favored nowadays among statist, “infrastructure.”

72 Cormac Ó Gráda, “Did Science Cause the Industrial Revolution?” University of Warwick Working Paper no. 205, 2014, p. 8.

73 Unsigned, “Monument to Mr. Watt,” *The Chemist* 16, June 28, 1824, p. 251. Watt’s own interest entailed, unfortunately, blocking innovation in steam engines until, in 1800, his State patent expired.

It covers any public “investment.”<sup>74</sup> All the words prejudice, as intended, the question of whether the State expenditure is anyway a good idea, that is, worth the coerced taxes to fund it.

In the 1820s through the 1840s the big internal improvements in the US were canals. In Britain forty years earlier a Canal Age was financed entirely with private funds. In the United States, by contrast, the belated investment in canals was backed by bond issues by the individual states. The canals were mostly wretched ideas—such as the nearly 500-mile long Wabash and Erie Canal, the longest in the US, built 1832-1843, on the eve of railroads that made it socially and privately unprofitable, and made American visitors to London unpopular for a while with British investors in US state bonds. We don’t say that every private investment is wise. Remember the failure rate. But at least it is voluntary, and correctable by failure, which the State can always avoid with additional coerced taxation and the corresponding subsidy to its good friends. The Wabash and Erie dragged on for ten years or so, and then was left to deteriorate from erosion of its earthen sides. It never made money.

In Sweden, the Göta [yoo-ta] Canal was built 1810–1832 by military conscripts, before Sweden turned liberal and started its rapid economic growth. The Göta, from Söderköping on the Baltic to Gothenburg on the Atlantic by way of the central Swedish lakes, was meant to give economic stimulus—Keynesian magic before Keynes—and to get around the tolls imposed by Denmark on freight coming in and out of the Baltic. Singularly ill-advised, frozen for seven months of the year, immensely expensive in real costs relative to its possible revenues, and

74 “Investment” has become the Democratic Party’s jargon word for any State expenditure whatsoever.

therefore reducing Swedish income on net, it was eventually used for a bit of pleasure boating, “Sweden’s Blue Ribbon,” on which in the summer of 2012, McCloskey and her sister happily rode.

Mazzucato maintains that “most of the radical, revolutionary innovations that have fueled the dynamics of capitalism—from railroads to the internet, to modern-day nanotechnology and pharmaceuticals—trace the most courageous, early and capital-intensive ‘entrepreneurial’ investments back to the State.”<sup>75</sup> Note her romantic vocabulary of “courageous,” meaning “imprudent,” and “early,” meaning “premature.” The courageous projects of high speed trains nowadays, for example, are indeed ubiquitously financed by governments. But railroads as an innovation—or, better to say, railroads *when* they were an innovation—were largely a creation of the private sector, by engineers such as Brunel and George Stephenson combining technological and business imagination for profit. When the railroads stopped innovating, and became in many cases net deductions from national income, the State stepped in. The vulture of nationalization spreads its wings only at the falling of the dusk of innovation.

Mazzucato believes that the State is good at detecting “high growth, high risk areas.”<sup>76</sup> The idea is that their evaluation by a Ministry of Innovation would not be affected by politics. Dream on, we would reply. The alternative mechanism of voluntary deals responds to the boring interests rather of customers—that is, citizens, as suppliers and demanders. When political considerations are allowed to tip the scales, and protect ill-advised products and incompetent producers, the result is of course bad. Every moderately alert adult knows this. It

<sup>75</sup> Mazzucato, *The Entrepreneurial State*, p. 167.

<sup>76</sup> Ibid.

is surprising that Mazzucato the economist does not.

For the alleged detection of “high growth if high risk areas” to be good for ordinary people, the interests of producers by themselves must not be the criterion of evaluation. Imagine biological evolution in which fitness was determined solely by the wishes of the existing species, or for that matter of the new species. The test is survival, or profit, interacting with the world as it is, not as one or another interested party passionately wishes it was instead. And the internal improvements and infrastructural investments have in fact been regularly corrupted into favors for the few and rich already in place, such as the investors in US transcontinental railroads, heavily subsidized by federal land grants and cheap loans backed by the Federal government. The transcontinentals were for a long time after they were built dubiously wise, socially speaking, and privately profitable only by corruptly arranged subsidy. Admittedly, they were glorious. Ah, the Golden Spike. The Iron Horse. Romantically ravishing.

The present-day long-distance passenger rail service in the US, Amtrak, is a classic case of politics favoring losers. Amtrak hemorrhages money, but staggers on, because it can rely on taxpayers. The economist Randal O’Toole calculates that Amtrak’s per-passenger-mile operating loss is higher than the airlines’ entire per-passenger costs.<sup>77</sup> Profits have the latent function (as the sociologists put it) of sending out memos concerning whether resources are being used badly or well. Governments regularly don’t get the memos, or refuse to read them, because the politics has other messages in mind, chiefly the

<sup>77</sup> Randal O’Toole and Caleb O. Brown, “Romance of the Rails,” Cato Daily Podcast, Washington, D.C.: Cato, October 8, 2018. Available at: <https://www.cato.org/multimedia/cato-daily-podcast/romance-rails>.



preservation of the status quo and the enrichment of the politically powerful. The “Cardinal” Amtrak train from Chicago to Washington has 31 stops, of which more than a third are in tiny West Virginia. Hmm. Does it have anything to do with Robert Byrd, the senator from the Mountain State serving fifty-one years, longer than any other senator in US history? Could be.

## 8.

## THERE IS NO “LINEAR MODEL”

One thing to be said in favor of Mazzucato’s idea of what produces innovation and enrichment is that it is amazingly simple. The “directionality” she describes follows the widely credited scheme that the biochemist Terence Kealey described as “the linear model.” Government money > science > technology > wealth. “Ever since Francis Bacon,” writes Kealey, people have agreed that science should not be a matter of trade secrets, not “monopolized but ... be used largely by others, including competitors, enemies, and the unborn.”<sup>78</sup> (Good luck in getting that promise to work out.) Because science was labeled a public good, it was easy to infer that government should finance it. That science and technology are to some unpredictable degree interconnected is, to be sure, obvious, and the connections became stronger as the 20<sup>th</sup> century proceeded. But their connection is far from linear in Kealey’s sense, and often weak. Among others, Joel Mokyr, though he does stress the eventual importance of some of science, has shown how tinkerers, producing better instruments to detect reality, have in fact yielded scientific understanding, not the

---

<sup>78</sup> Terence Kealey, *Sex, Science and Profits*, London: Heinemann, 2008, p. 17.

## THE INTERNET, FOR EXAMPLE, WAS *NOT* INVENTED BY THE STATE

Mazzucato does not argue for industrial policy on the historical evidence of countries such as her father's native Italy, which openly and proudly experimented with such policy, and, everyone agrees, disastrously failed. No, Mazzucato is claiming the experience of the *United States* as evidence of her contention. We admire the scientific courage she shows. The US is surely a hard case.

To argue that the US government is an entrepreneurial State, as against a tool of special interests, Mazzucato presents four success stories: DARPA (the Defense Advanced Research Projects Agency), the Small Business Innovation Research program, orphan drugs regulation and nanotechnologies. What they share is "a *proactive* approach by the State to shape a market in order to drive innovation."<sup>90</sup> The idea is that State agencies envision opportunities for innovation, and pursue them, courageously. Hers is, again, the linear model. Private companies—cowards that they are—at best reach for the low-hanging fruit, later.

Mazzucato sees planning as the ultimate creative act. Yet planning by definition is an attempt to avoid creativity. It is an attempt to lay down the future by routine. The Chinese classic *The Art of War* is not

---

<sup>90</sup> Mazzucato, *The Entrepreneurial State*, p. 73. *Her italics.*

about the courageous heroism characteristic of the West, as tragedy, as hopeless courage, as Roland at the pass of Roncevaux. It is about prudent planning upstream, not heroism downstream when the flood becomes irresistible. Of course everyone needs to try to plan. But, as the great philosopher and baseball coach Yogi Berra said, "It's tough to make predictions, especially about the future." When Orville Wright was asked in 1909 what uses one could make of his machine for powered flight, he replied, "Sport, mainly. And scouting in war."<sup>91</sup>

Mazzucato considers DARPA, for example, a powerhouse of technological creativity. According to her, it was "going way beyond simply funding research . . . . DARPA funded the formation of computer science departments, provided start-up firms with early research support, contributed to semiconductor research and support to human—computer interface research, and oversaw the early stages of the Internet."<sup>92</sup> DARPA is presented by Mazzucato as a model of effectiveness: it had a "dynamic and flexible structure;" "increased the flow of knowledge across competing research groups." "DARPA officers engaged in business and technological brokering."<sup>93</sup>

But how did such alleged successes come about, exactly? Mazzucato is parsimonious with economic and administrative detail on the matter. Her reader learns that DARPA had "a series of relatively small offices," that it financed both basic and applied research, and it helped "firms get products to the stage of commercial viability" by providing firms

91 Recalling the Ft. Myer Virginia tests for the Army in 1909. Kenneth C. McIntosh, "Sudden Greatness," *Atlantic Monthly*, September 1921.

92 Mazzucato, *The Entrepreneurial State*, p. 76.

93 Ibid., p. 77.

with "assistance that goes well beyond research funding."<sup>94</sup> It's not clear how the good things claimed, but not demonstrated, actually happened. Her evidence sounds like press releases from DARPA itself. Mazzucato does not for instance explain what the criteria for distributing grants were, what DARPA's "assistance" really entailed, how its offices were organized, or how the grants and offices and bureaucrats engaging in "business and technological brokering" changed anything of consequence for the better. She asserts that "The key is that the government serves as a leader."<sup>95</sup> But she does not explain how the key led to opening a door, and whether the particular door was an important one.

The main argument for her assertion is the "invention" by DARPA of the internet. Our attitude towards such a claim is like that of a Victorian atheist who suggested that every church door should have a big sign, "Important If True." The question is whether the American government envisioned anything like the internet. The answer is obvious: of course it didn't. There was no "mission-oriented directionality." The investments by the military look like Christopher Columbus' voyages: the entrepreneurial State (is said to have) discovered the West Indies, having left for the *East* Indies. For the government to have "invented" the internet, a minimal prerequisite would seem to be for the government to have an anticipation of the internet. Otherwise the history is merely a scattershot, decidedly not "directional." And in fact, as a group of experts later pointed out, when asked to evaluate the alleged directionality, the Department of Defense did *not* anticipate an internet to, say, harden US survivability in the event of a nuclear

94 Ibid., pp. 78-79.

95 Ibid., p. 79.



attack.<sup>96</sup> In the 1960s the Air Force did consider how a decentralized communications grid distinct from the traditional telephone might operate. But the Department of Defense then terminated the research and took no action. Some “directionality.”

The economist and economic historian Price Fishback acknowledges, as we do, that “the military funding contributed spillover benefits to the development of the commercial internet.” One could say the same about all sorts of events, governmental or not. No human is an island entire of herself. But Fishback notes that there is a big difference between unintended consequences and “directionality,” between happenstance and plan. The military only loosely controlled the projects. No one anticipated that the killer app of the ARPANET would be email, which was first developed in 1972. The messages, already with the funky @ in the address, consisted then of discussions of sci-fi, sex, drugs, and rock and roll, the moves in long-distance chess matches, and the occasional remote printing of a dissertation or paper. Bob Kahn, a leading developer of the ARPANET and the internet, observed that DARPA “would never have funded a computer network in order to facilitate email” because the telephone already served person-to-person communications perfectly well (said the planners, unable like Orville Wright to see beyond the trivial early uses).<sup>97</sup> The DoD’s DARPA contracted with private firms, which created data links to connect computer facilities doing defense-related work. But there was no

<sup>96</sup> Ibid., p. 104.

<sup>97</sup> Quoted in Price V. Fishback, “Seeking Security in the Postwar Era,” in Price V. Fishback et al., *Government and the American Economy: A New History*, Chicago: The University of Chicago Press, 2007, p. 519.

anticipation, no vision.<sup>98</sup> If you are in praise of planning and directionality, there had better be a plan in a particular direction. There wasn’t. The governmental “invention” of the Internet is a myth on the order of Al Gore’s inventing it—though not so funny in itself, and, if taken seriously, a good deal more misleading for policy.

The internet is in truth a complicated reality, more of an ecosystem of inventions and instruments than anything that could be considered an easy-to-direct “device” or a “tool.” By singling out ARPANET’s contributions—packet switching and the forerunners of modern e-mails—Mazzucato assumes that they are the key ingredients in the internet ecology, key in the sense of irreplaceable, necessary, with fixed coefficients. She doesn’t offer any evidence for their key-ness.

A better approach is that of the economist Thomas W. Hazlett. In a recent book he chronicles the development of wired and wireless inventions for communication, beginning with the radio, and the evolution of its regulation by the State. Sometimes the State stifled entrepreneurial creativity and sometimes enabled it.<sup>99</sup> Mainly it stifled, as for example FM radio. Hazlett shows that the commercial internet as we know it is a much longer story than DARPA. It goes back to radio and TV and took advantage of the staggering and largely private achievement of wireless technology. It was decidedly not State

<sup>98</sup> Stewart Baker et al., “Regulators in Cyberia,” Regulatory Transparency Project of the Federalist Society, July 24, 2017, p. 7.

<sup>99</sup> Thomas W. Hazlett, *The Political Spectrum. The Tumultuous Liberation of Wireless Technology, from Herbert Hoover to the Smartphone*, New Haven: Yale University Press, 2017.

entrepreneurship.<sup>100</sup>

The internet, in short, was not planned at the level of the State or its agencies. Nor, largely, was it the fruit of State action. Human action, interacting in markets, made it. Supply chains depend mainly on individual human action. The relevant contributions of the State's "entrepreneurship" were small, and often disastrously negative.

• • •

The same can be said of a tale much heard recently, of the Chinese Model. A popular view on the left, which seems persuasive to many others, is that China proves the reliance on commercial betterment to be misplaced—that in China the State Did It. "Observe," some will say, "all that platting and sewerage and road building. Tyranny is good for you." Their mistake arises from a lawyer's way of thinking, as against an economist's. The economist points out that if in, say, the Pudong district of Shanghai the private developers had not gotten sewerage or roads from the State, the developers would have built them without the State's help. Sometimes better. A Chicago architect friend of McCloskey's who has worked on such projects in both China and India tells her that self-building of roads and sewers by the private contractor is in fact what happens in India, where local government is still especially corrupt and incompetent. Yet real per capita income of poor people in India since its shift to liberalism in 1991 has grown almost as fast as China's, and recently, coronavirus excepted, faster.

100 In the early 1920s, McCloskey's grandfather was offered stock in the new and crazy commercial enterprise of the Radio Corporation of America. He didn't take it up. McCloskey has therefore had to work for a living, instead of enjoying the season each year at Cannes.

And, after all, Shanghai and wider China once had a State highly interventionist in the economy, certainly capable of doing the lovely statist planning and driving and the provision of directionality, correcting the horrible market imperfections that Mazzucato and most modern economists dream of. But the Maoist government achieved nothing remotely like the results that private innovism has produced everywhere in China, and now in India. If planning is such a fine thing, then pre-1978 Communism would have been an economic paradise. Yet in fact when at last the Party adopted economic liberalism, taught in this by the great Chinese economist S. N. S. Cheung, and ceased killing growth by killing businesspeople, real income for the poorest started doubling every seven to ten years. India has the same story, after 1991, following forty-four wretched years of Gandhian socialism and egalitarianism that resulted in poor-people-neglecting rates of growth of 1 percent per year per capita in real terms, at which it would take seven decades, not one, to double. None of the Great Enrichments—not Britain's nor Sweden's nor Japan's nor Hong Kong's nor Ireland's nor Chile's nor China's nor India's—has occurred until economic liberalism took hold. Russia grew faster in the 1890s economically than in the time of five-year plans in the 1930s. By the 1950s central planning had produced stagnation.

Not all of what the Chinese government did after its tentative permitting of commercially-tested betterment after 1978 has been a good idea. Fancy that: a State, lacking a market test, does unprofitable things, which reduce rather than raise income, though pleasing to the Party in power. We are astonished. The Chinese State, that is, makes the same mistake as Mazzucato's steering does, with State "investments" in "infrastructural" projects that mainly glorify politicians.

For example, the Chinese system of high-speed trains is a glorious

State project, which now stretches through the entire immense country—all of the trains raised twenty meters above grade on viaducts. Stunning. But was it a good idea? China, still with an income per head, despite its successes from economic liberalism, only one-fifth or one-fourth that of the United States, has more of such three-hundred-kilometer-per-hour trains than the rest of the world combined. Like the TGV in France, the trains are nice for affluent people with a high opportunity cost of personal time, and are massively subsidized for their benefit. But they reduce income on balance for the rest of the nation.

What made China better off was not glorious infrastructure. And it is certainly not the wretchedly managed Chinese government-owned enterprises, now busy under Xi Jinping buying up the private firms in order for the Party to control them better, for the benefit of Party members and their unemployable children. What made China better off was its massive experiment in commercially tested betterment left in private hands. The betterment was allowed by the Communist Party behaving itself moderately well (for a change), at any rate in private economic matters, by comparison with the wretched standard under Mao.

State glory, “courage,” is not the way forward.

## 10.

BOTTOM-UP, THEN, IS *PRETTY GOOD*

We readily admit that markets are not perfect in directionality. Indeed, markets have no centralized, creationist direction at all. Markets, said the economist and Nobelist Friedrich Hayek, are nothing but what comes out of the “efforts of millions of individuals in different situations, with different possessions and desires, having access to different information about means, knowing little or nothing about one another’s particular needs, and aiming at different scales of ends.”<sup>101</sup> Like biological evolution, markets result from a myriad of interactions, in the human case in various natural environments among people, sometimes assembled in corporations, trade unions, consumer groups, or sometimes trading happily on their own. After all, how could the crooked timber of humanity yield anything but a certain “imperfection,” if the word “perfection” means “utter rationality according to a theorist’s second-guessing utopia”? One knows such a truth of humility by synthetic a priori, as it were, qualitatively.

But the scientific question for explaining the Great Enrichment is not solely qualitative. It’s not *qualia* alone, that is, but also *quanta*.

101 F.A. Hayek, *The Fatal Conceit: The Errors of Socialism* (1988), London: Routledge, 1992, p. 95.