

The Late-Antiquity Pause

There is more in what happens after 165 than simply a sharp fall in the savings-investment share of production, plus a sharp fall in societies’ tastes for luxuries as imperial peaces and the social networks that maintain resource flows to cities and ‘lites collapse not just in the Roman Empire but along the entire high-civilization arc from Gibraltar to Shenyang. There is a very marked slowdown in the underlying pace of technological advance as well. The proportional rate of growth *h* of the value *H* of humanity’s useful-ideas stock falls by three-fifths. *h* had averaged 1.3%/century in the pre-literate -6000 to -3000 deep-past early Agrarian Age. It had then more than doubled and averaged 3%/century in the -3000 to -1000 early-middle Agrarian Age of bronze and writing. It had then doubled again to 6%/century in the classical, axial, iron Agrarian Age of -1000 to 1 or 165. But the world’s population does not seem to have been that much higher in 800 than it had been in the year 1: perhaps 240 million. A continuation of the growth pace maintained before year 1 would have gotten us to 280 million people on the globe by 800. A further doubling—as the pre year-1 patterns might have led one to anticipate—would have gotten us to 450 million people by 800, within shouting distance of the technology level and population density that, in our world, then triggered the shift to the Imperial-Commercial Age.

The most obvious hypothesis to put forward is that humanities rate of technological progress depends not so much on some constant slow drift or even on the number of heads thinking about problems, but on the size of the stem labor force and its ability to communicate and bounce ideas off of its different members and segments. There are surely other factors as well. Picking the low-hanging fruit means the technological progress is going to get harder as advances. Stepping-o- toes means that success at generating new valuable ideas will not scale as fast as the number of people engaged in the activity increases shifts in information, communication, and research technologies—both physical technologies like writing and printing, and intellectual technologies like the method of experiment—matter as well.

I do not claim to understand the causes of the Late-Antiquity pause. And it should make everyone think again about whether there is any sense in which the arc of the universe bends toward technological progress. Admittedly, technological progress during the year -1000 to year 150 axial, iron, classical age was no great shakes by our standards. Nevertheless, it was 6% per century. That adds up to a doubling of humanity’s technological prowess over the entire span. Yet that rate of progress could not be continued, even though there were by the year 150 fully four times as many humans communicating via a much more intensive network of trade, travel, and information infrastructure.

Perhaps we can start thinking about this by musing about how societies organize their entrepreneurial energies and then direct them. Is the society so structured as to direct its energies in productive win-win ways? In ways that are unproductive for technological advance and ultimate human flourishing? In ways that are purely destructive? Consider Odysseus’s attitude toward the colonies, or Genghis Khan’s short discussion with one of his nobles:

Once Genghis Khan asked Boorchii Noyon, who was the chief of the generals, “what is the greatest joy and pleasure for a man?”

Boorchii said: “It is to go to the hunt, a spring day, mounted on a beautiful horse, holding his fist on a hawk or a falcon, and see it cut down its prey.”

The prince made the same question to General Bourgoul, and then to other officers, who all answered as Boorchii.

“No,” said Ghengis Khan, “the greatest enjoyment of a man is to overcome his enemies, drive them before him, snatch what they have, to see the people to whom they are dear with their faces bathed in tears, to ride their horses, to squeeze in his arms their daughters and women.”

Perhaps civilization’s progress was doing OK up to the year 150. They were a lot like us—creative and ingenious. Given their small number of heads working on problems, and given the difficulty in storing and retrieving and transmitting information (scrolls! Ugh!), they were doing as well as could be expected. And they were doing a better job with every millennium.

But then it stalled out. Instead of the rate of ideas growth doubling to a near-Imperial Commercial Revolution-Era pace after the year 150, the rate of growth fell by 3/5. This was a disastrous interruption in the progressive historical process. There was something special and frightening about this Late-Antiquity Pause.

Willem Jongman definitely takes this position, and blames it on a high civilization with a substantial upper class that wanted to be very prosperous, felt it deserved to be prosperous, and had the power to tighten the screws to extract more from the rest of society, and so it reacted to the plagues by screwing down on the peasantry and by thus shifting from developmental to extractive institutions. This happened at both ends of Eurasia, with the complete catastrophe at the western end of Eurasia that was the fall of the Roman Empire in the west, a fall from which there was little recovery until the accession of Otto I —the Great— of Saxony in the early 900s, and the lesser catastrophes at the eastern end of Eurasia that were the collapse of the Han Empire, the Three Kingdoms period, and so forth on up to the accession of the Song Dynasty in the mid-900s. And in between? India, Persia, and Byzantium did not see as great declines, but they too were badly battered by nomad incursions. It was the Islamic world that as of 800 was the brightest civilizational light in Egypt, Syria, Mesopotamia, and elsewhere.

Note that this was not the first Dark Age. We can see an equivalent happening some 1500 years before, with a collapse of high civilizations and an interruption of material progress at the end of the Bronze Age.

We read Jongman about the prosperity of the Roman Empire. And then his guess as to why it was not followed by a further upward leap, why that fluorescence came to an end. We’re given and called it the triumph of barbarism and religion. That CEO the Roman Empire did not have a military establishment to resist the barbarians. Especially after a great deal of social energy had been diverted to building churches and pursuing salvation in the next world. Rather than pertaining military glory and political power in this one. But young man has, I think, a more subtle and sophisticated explanation.

Mediterranean shipping collapses. Rhine Valley construction collapses. Lead atoms from smelter is carried into the atmosphere and dropped onto the Greenland ice, fall enormously. All gone. And the Pax Romana gone with it. And trade and comfort and the ability to have a high class bowl and high-class well-made era tiny table where if you happen to be living in the shadow of Hadrian’s Wall in central England. And the rule of law wind, and the ability of low class people as citizens to have their property and their rights protected by magistrates. Instead of being a Roman citizen and an independent small farmer, you were wary, well-advised as the Roman Empire collapsed, to voluntarily go and become the surf of some local landlord. Ideally a local landlord who either had good friends among the bully boys of the barbarians who were conquering the empire. Or was himself a Bavarian as well.

Why does lead looks so very different from everything else? And the answer is, churches. Churches had lead roofs.

Even given the general slowness of ideas generation, there were still impressive efflorescences. So what kept the efflorescence of the Roman Empire from breaking through in to Commercial Revolution-scale growth, and then Industrial Revolution, and then Modern Economic Growth? And then what kept other efflorescences from breaking through into commercial revolution-scale growth?

For, remember, ultimately one did. After the Bubonic Plague of 1346-8 in western Europe there came the Renaissance. And that efflorescence did trigger faster growth: it triggered the Commercial-Imperial Revolution.

An obvious place for us humans to have gotten something like Britain 1600-1800 before is Rome: the Roman Empire in the years after 1 or 150. There are, of course, other candidates. But Rome is the one I know most about, hence the one I want to focus on.

We have the Axial-Age—from -1000 to the year 1—“acceleration in ideas growth: a doubling of the ideas growth rate from 0.03 to 0.06% per year—”note how ludicrously low those are: 6% a century! Just enough technological progress to hold standards of living constant with a 12% increase in population and a 12% reduction in average farm size! Over a century! And at the century’s end comes the rise of the Pax Romana in the Mediterranean—and beyond, to Scotland, Roumania, Austria, Armenia. The largest empire the world had ever seen; one whose elite was interested in public works for urbanization and transport in a way not found in any previous empire, and one’s “most important”—not solely interested in exploiting the empire for the benefit of a ruling city or a ruling cases. Don’t get me wrong: they were interested in exploiting the empire for the benefit of the senatorial and knightly classes. But they were also interested into turning people, at least people with social power, in the empire into \_Romans\_. So we get this mammoth expansion in trade, this mammoth expansion in investment, this simultaneous rise in population but also in standards of living in the sense of comfortable conveniences throughout the empire (and luxuries too).

And. Then. It. All. Goes. Away. Mediterranean shipping. Rhine River-valley construction. Lead atoms from smelters carried into the atmosphere and dropped onto the Greenland ice. All gone. And the Pax Romana with it. And trade. And comfort. And the rule of law. And the ability of low-class people, as citizens, to have their property and their rights protected by magistrates.

Societies of luxury societies of hierarchy societies of sociology that restrict effective female fertility also tend to be societies with a great deal of capital accumulation and investment. We see this perhaps at the sharpest end at the Maya, the collapse of the high Maya temple based urban civilization late in the first millennium. So not just living standards, fall and luxuries and comfort all but disappear, but also saw the population fall by perhaps three quarters as the social power to mobilize labor for large scale works to clear forests, channel runoff and build raised beds in which agriculture could be carried on productively vanished as well. By the year 1200, the high Maya civilization was gone and the Yucatan supported only a quarter as many Maya as it had 400 years earlier. But the surviving peasants were almost surely better off than their distant ancestors had been, for

and the Tlaxalan supported only a quarter as many Maya as it had 400 years earlier. But the surviving peasants were almost surely better off than their distant ancestors had been, for the benefits of Mayan civilization appear to have been unequally distributed to those at the top.