

Review of *A Culture of Growth*, by Joel Mokyr. Princeton University Press. 2016.

Joel Mokyr is among the foremost experts in economic history and the history of innovation writing today. As such, the publication of *A Culture of Growth* has been widely anticipated. The main aim of the book is to uncover the reasons why early modern Europe became increasingly open to new ideas and concepts after 1500 and to explain why such a 'culture of growth' did not emerge elsewhere in the world.

Mokyr has been writing about the origins of innovation and modern economic growth for almost the past thirty years, since he began *The Lever of Riches* (1990). Along the way, he has moved from the study of technology and scientific innovation to the role that culture plays in generating innovative societies. Throughout, he has been motivated by the questions such as, what was the link between science and innovation? Why did previously innovative societies including ancient Rome or Song China cease to innovate? Why was it that during the Industrial Revolution innovation became the norm and scientific development cumulative? Over the course of his career, Mokyr has explored many aspects of these questions. In the past decade he has advanced the concept of an "Industrial Enlightenment" in order to characterize those important features of British society, which in the 18th century helped to give rise to the Industrial Revolution.

In his previous work Mokyr's argument has centered around the importance of technology and on the fact that it sustained advances in technology that are the ultimate drivers of modern growth. But the argument, developed in each of the books he has written, have been subtly different. *The Lever of Riches* (1990) focused on the causes of technological innovation. In *The Gift of Athena* and the *Enlightened Economy*, Mokyr advanced what one could consider as cultural arguments for the rise of, not only inventors and innovators, but also a workforce made up of tinkerers and 'improvers' in eighteenth century England. But in those books he shied away from investigating in full the forces that help to give rise to such cultural of practical innovation and improvement.

This is the task that *A Culture of Growth* sets for itself and the book itself represents recognition that culture has finally arrived as an important and legitimate concept in discussions of economic growth.

A Culture of Growth is divided into five parts. The first part of the book is a meditation on how economists should think about culture. It discusses models of cultural evolution inspired by biologists and evolutionary scholars as well as models of choice-based cultural evolution. These chapters introduce a number of important questions without necessarily offering a definitive answer to them: To what extent is cultural evolution analogous to biological evolution? Why do parents inculcate particular cultural values in their children? How do institutions shape cultural change?

The second part of the book goes on to argue that cultural entrepreneurs played a crucial role in the historical development of innovative economies in the period between 1500-1800. Cultural entrepreneurs include innovators such as Martin Luther, Adam Smith or Karl Marx, individuals who both developed new ideas, arguments, and theories and successfully advanced them in the market for ideas. The key cultural entrepreneur in Mokyr's account is Francis Bacon. Bacon mattered less for his own work than for the inspiration project he envisioned of putting science to work for material progress. Bacon's ambitions for the application of science to industry were then taken up by "savants" and "fabricants" who devised and tested hypotheses and built and improved machines and tools.

As one expects from Mokyr, the argument is developed in great detail and carefully situated within the latest historical scholarship in the field. At all points, he is keen to acknowledge caveats and possible counter-arguments while still advancing the thesis that, after 1600, the influence of first, Bacon and his disciples, and then Isaac Newton, were decisive in shaping a shared culture of innovation and progress.

Great individuals and scientists mattered but they did not act on their own and Mokyr depicts in vivid detail the followers and secondary figures who played a crucial role in disseminating the new ideology of progress, individuals such as Samuel Hartlib who played a crucial role in the establishment of the Royal Society and John Wilkins, Warden of Wadham College Oxford and another founder of the Royal Society.

It was individuals like these who helped build a market place for ideas. This was not a deliberated or planned process. Rather it was the result of a process of spontaneous order and cultural evolution in which the actions of various writers, intellectuals, scientists across Europe built a shared community of innovators from which emerged—the Republic of Letters. This was a forum in which ideas could be tested and disputed and norms of good behavior and scientific standards could develop. This is the focus of parts 4 and 5 of the book and constitutes the most original aspect of the argument advanced in *A Culture of Growth*.

In previous era and in other societies innovators were often silos: brilliant individuals working more or less in isolation like Leonardo de Vinci. Or they were dependent on the patronage of a single individual, often a monarch who they might offend or displease. But individual genius was not enough to produce a culture of innovation. And the patronage systems of most pre-modern societies were not conducive to the pursuit of potential and innovative new ideas.

What was required was the emergence of a meta-institutions like The Republic of Letters. This was a forum where scientists and scholars could engage with one another in the pursuit of knowledge. As Mokyr documents in detail, The Republic of Letters crossed national and religious borders and followed strict rules of intellectual engagement. It made possible an active market for ideas, that is, a forum where ideas

could be refined, tested, rejected or eventually accepted and built upon. Despite the famous stories that we are familiar with, of clashing egos and feuds over the development of calculus, in general the Republic of Letters was remarkably open to new scholars advancing ideas that overturned existing orthodoxies, whilst also successful at vetting out quacks and charlatans, and advancing best practice methods. Participants in the Republic of Letters practiced an important form of analytic egalitarianism and hierarchy of merit whereby individuals were judged on the basis of their ideas and not their social pedigree. Mokyr argues that in general the Republic of Letters was successful in weeding out bad ideas and enabling good ideas to diffuse and spread.

Some of this is familiar (not least from Mokyr's earlier work) but as an economic historian, Mokyr excels at pointing how technology and institutions complemented the rise of a culture of shared ideas and innovations. To take one mundane but fascinating example, consider how crucial the emergence of a Europe-wide postal services was to scholarly communication. This began in the fifteenth century as the de Tasso family began organizing a postal system in Italy before expanding into the Holy Roman Empire in the sixteenth century. By the seventeenth century a postal network linked all of Europe and made feasible a continuous and reliable correspondence between scholars living in different countries.

The development of the European postal system illustrates the importance of cultural unity and political fragmentation in Mokyr's argument. Numerous scholars have argued that political fragmentation was key to Europe's eventual rise. But this argument has often been underspecified, relying either on a direct and misleading analogy between countries and firms or to the notion that political competition lead to fiscal competition, an argument for which there is little historical or empirical support. But it was not decentralization per se that was crucial. India was fragmented for much of its history as was the Middle East. What made Europe special, Mokyr argues, is the combination of cultural unity with political fragmentation and competition.

Political fragmentation alone is not sufficient for economic growth and innovation. This is because political fragmentation imposed economic costs. In many instances it led to excessive military competition between states and to a proliferation of trade barriers. From the point of view of the purely static gains from trade and the division of labor, a unified empire like that of Rome or Qing China would surely have been preferable.

The upside of Europe's political divisions was dynamic, not static, and it was conditional. It was only in conjunction with the existence of a thriving intellectual culture that Europe's fragmentation became a critical ingredient in the eventual transition to modern growth. The political divisions of Europe meant that innovative and heretical thinkers always had an avenue of escape from heavy-handed political authorities. This escape valve was crucial because it prevented the ideas and innovations of the Renaissance and Reformation period from being suppressed or lost once the Counter-Reformation became ascendant in southern Europe after 1600. Political fragmentation

allowed Descartes and Bayle to flee France, Hobbes and Locke to flee England. The political divisions of Europe also meant that there was a host of potential patrons and protectors and no writer or scientist was dependent on the favor of a single, all powerful monarch.

Furthermore, the cultural unity of Europe meant that the inventors, innovators, and tinkers in England and the Dutch Republic could build on the advances of the European-wide Scientific Revolution. Europe's interconnectivity due to the Republic of Letters helped to give rise to a continent-wide Enlightenment Culture. In the British Isles, this met a response from apprentice trained and skilled craftsmen able to tinker with and improve existing technologies. In contrast, political fragmentation in the medieval Middle East or pre-modern India does not seem to have promoted innovation, whereas the political unity of Qing China produced an elite culture that was conservative and that stifled free thinking.

In Part 5, Mokyr turns to the question why such a culture of innovation did not emerge in China. Mokyr has been wrestling with the "Why not China?" question in *The Lever of Riches* a full decade before the publication of Pomeranz's *The Great Divergence*. Here he focuses on what institution conditions precluded the emergence of innovative culture in Qing China (1644-1911). He focuses on why important developments in Chinese scholarship and science did not lead to an intellectual flowering comparable to that of the European Enlightenment.

He is right in my opinion to emphasize the critical institutional differences between China and Europe during the period before 1800. California school scholars like Bin Wong and Ken Pomeranz have painted a picture of surprising resemblances between Eastern and Western Eurasia. And indeed, in terms of many purely economic factors such as transport networks, protection of property rights and the freedom of the market to function, the differences were either small or greater within Europe than between Europe and China. Nevertheless, from a political economy perspective Qing China and early modern Europe were very different. His conclusion here is worth quoting.

"The failure of radically heterodox views to catch on in China underlines the fundamental difference between China and Europe: there were repressive and reactionary regimes galore in Europe, but the interstate competitiveness constrained their ability to enforce a specific orthodoxy . . . what was missing in China's institutions was a high level of competitiveness, both in the market for ideas and at the level of political power" (Mokyr, 2016, p 317).

This argument seems fundamentally correct and should be taken as an invitation for future research to investigate the most important sources of rigidity and flexibility in both Chinese and European institutions.

Clearly then, *A Culture of Growth* is an important book. It is laden full of ideas and insights to be developed further by economic historians. It is rich with ideas and arguments, historical details, descriptions of notable scholars, scientists, and writers, and it displays the author's mastery over a range of topics in both the history of ideas, the economics of culture and the comparative economic history of Europe and China. These are positive features for scholars but may limit the appeal of *A Culture of Growth* for non-specialists. For example, the discussion of the role culture plays in economics is of interest for those of us working in the field but it may deter outsiders. None of this takes away from the fact that Mokyr has written a splendid book that will be referred to and discussed for years to come.