

## The 100 most influential persons in history according to Hart (1993, pp. vii-x)

1. Muhammad	21. Constantine the Great	41. Oliver Cromwell	<b>61. Nikolaus August Otto</b>	81. John F. Kennedy
2. Isaac Newton	<b>22. James Watt III</b>	<b>42. Alexander Graham Bell</b>	62. Francisco Pizarro	82. Gregory Pincus
3. Jesus Christ	23. Michael Faraday	43. Alexander Fleming	63. Hernando Cortes	<b>83. Mani</b>
4. Buddha	24. James Clerk Maxwell	44. John Locke	64. Thomas Jefferson	84. Lenin
5. Confucius	25. Martin Luther	45. Ludwig van Beethoven	65. Queen Isabella I	85. Sui Wen Ti
6. St. Paul	26. George Washington	46. Werner Heisenberg	66. Joseph Stalin	<b>86. Vasco da Gama</b>
<b>7. Ts'ai Lun</b>	27. Karl Marx	<b>47. Louis Daguerre</b>	67. Julius Caesar	87. Cyrus the Great
<b>8. Johann Gutenberg</b>	<b>28. Orville/Wilbur Wright</b>	48. Simon Bolivar	68. William the Conqueror	88. Peter the Great
<b>9. Christopher Columbus</b>	29. Genghis Khan	49. Rene Descartes	69. Sigmund Freud	89. Mao Zedong
10. Albert Einstein	30. Adam Smith	50. Michelangelo	70. Edward Jenner	90. Francis Bacon
11. Louis Pasteur	31. Edward de Vere ("William Shakespeare")	<b>51. Pope Urban II</b>	71. William Conrad Röntgen	<b>91. Henry Ford</b>
12. Galileo Galilei	32. John Dalton	52. 'Umar ibn al-Khattab	<b>72. Johann Sebastian Bach</b>	92. Mencius
13. Aristotle	33. Alexander the Great	53. Asoka	73. Lao Tzu	<b>93. Zoroaster</b>
14. Euclid	34. Napoleon Bonaparte	<b>54. St. Augustine</b>	74. Voltaire	94. Queen Elizabeth I
<b>15. Moses</b>	<b>35. Thomas Edison</b>	55. William Harvey	75. Johannes Kepler	95. Mikhail Gorbachev
16. Charles Darwin	36. Antony van Leeuwenhoek	56. Ernest Rutherford	76. Enrico Fermi	96. Menes
17. Shih Huang Ti	37. William T. G. Morton	<b>57. John Calvin</b>	77. Leonhard Euler	97. Charlemagne
18. Augustus Caesar	<b>38. Guglielmo Marconi</b>	58. Gregor Mendel	78. Jean-Jacques Rousseau	<b>98. Homer</b>
19. Nicolaus Copernicus	39. Adolf Hitler	59. Max Planck	79. Niccolò Machiavelli	99. Justinian I
20. Antoine Lavoisier	40. Plato	60. Joseph Lister	80. Thomas Malthus	<b>100. Mahavira</b>

Spanish-speaking	4%	Scientists/physicians	35%	Science/technology	45%
Chinese-speaking	7%	Inventors	10%	Philosophers/artists	11%
Ancient Greece	5%	Discoverers/conquerors	4%	Leaders	44%
Rome-Byzantium	7%	Philosophers	6%		
Italian-speaking	5%	Rulers/political leaders	28%		
German-speaking	15%	Artists	5%		
French-speaking	10%	Religious leaders	12%		
English-speaking	25%				
Russian-speaking	4%	<b>Eurocentric list?</b>			
Muslim	2%	Non-European	29%		
Ancient India	3%	Non-Western	20%		

### The most influential man in history? Norman Borlaug: Father of the Green Revolution

"He saved more human lives than any other person in history": he saved hundreds of millions of starving people. Murty (2009, p. 110)

### References

Hart, Michael H. (1993): The 100: A ranking of the most influential persons in history, Carol Publishing Group, New York.  
Murty, Krishna K. (2009): 50 Timeless Scientists

"The central hypothesis of this book is that genetic differences between human groups (in particular, differences in average native intelligence) have been an important factor in human history."

Michael Hart

## The resource curse thesis

### Definition

Resource-rich economies appear to grow less (perform worse) than less well-endowed economies.

### Example 1: the postwar industrialization experience of developing countries.

“among the larger newly industrializing countries, the biggest countries like China, India, Brazil and Mexico have made slower progress with industrial diversification than the smaller resource-deficient countries like Korea and Taiwan. All six countries were pursuing an autarkic (i.e. strongly self-sufficient) industrial policy (AIP) in the 1950s, but the two smallest countries abandoned that policy in favour of a more outward-oriented competitive industrial policy beginning with Taiwan in 1958 and Korea in 1963.”

Auty (1993, p. 2)

“Taiwan and Korea reverted to competitive manufactured exports sooner than the larger countries in order to overcome their foreign exchange deficiencies. This meant that, relative to the larger countries, they were deflected from their natural comparative advantage for a shorter period of time so that fewer distortions built up in their economies. By the time the larger countries encountered the AIP foreign exchange constraint in the late 1960s (as their primary product exports shrank relative to the size of the rest of the economy) their industrial policy was difficult to reform. This was due to entrenched powerful vested interests that benefited from the rents (returns in excess of normal profits) which were created by the protection of more and more industrial sectors from international competition.”

Auty (1993, p. 2)

### Example 2: mineral economies, defined as

“developing countries which generate at least 8 per cent of their GDP and 40 per cent of their export earnings from the mineral sector. As such they comprise around one-quarter of all the developing countries.”

Auty (1993, p. 3)

“The frequent existence of substantial rents (revenues in excess of production costs and a normal return on capital) on mineral ores can, however, when captured by the government through taxation, destabilize the economy. In particular, the imprudent domestic absorption of mining sector rents is capable of rendering much agricultural and manufacturing activity internationally uncompetitive. This occurs through a process known as ‘Dutch disease’. It results from a strengthening (appreciation) of the exchange rate as a consequence of the over-rapid inflow of mineral rents into the domestic economy. In some cases, such as Mexico, Venezuela and Nigeria during the 1979–81 oil boom, virtually no non-mining activity remained internationally competitive.”

Auty (1993, p. 3 and p. 5)

“The experience of the six hard mineral economies [Bolivia, Peru, Chile, Jamaica, Papua New Guinea, and Zambia] confirms the lessons of the oil-exporting countries: mineral booms can corrode the competitiveness of non-mining tradeables and downswing adjustment tends to be lagged and inadequate, even with cautious economic policies (...) a central tenet of doctrinal orthodox policy, namely sectoral neutrality, should be rejected. Rather, the mineral sector should be regarded as a bonus. (...) A striking feature of all six economies in the early 1970s was the lack of commitment to competitive economic diversification. It was assumed that the primary sector would generate sufficient foreign exchange and revenue bonuses indefinitely.”

Auty (1993, p. 257)

“The basic lesson is (...) that the imperfect response of the non-mining tradeables to exchange rate shifts driven by mineral price volatility makes mineral dependence high cost. The sustainable development of mineral economies lies in successful diversification into competitive non-mining tradeables. The mineral sector should not be regarded as the backbone of the economy; instead it should be viewed as a bonus with which to accelerate economic growth and healthy structural change. A pragmatic orthodox policy, preferably supported by effective market-conforming intervention, can achieve this.”

Auty (1993, p. 258)

### Question

Does the influence of resource endowment on economic growth decline with development/wealth?

### Reference

Auty, Richard M. (1993): Sustaining Development in Mineral Economies: The Resource Curse Thesis, Routledge, London.

## Characteristics of industrial capitalism

### **Fragility and mutability of the economic world**

“Two experiences, we believe, characterize the economic life of our age and distinguish it from the immediately preceding history that formed the horizon of our deepest expectations. The first is the sense of fragility, and especially of institutional fragility as a continuing, perhaps permanent feature of economic life (...) the sense of fragility goes to the once commonsensical idea that progress would lead to the gradual consolidation of particular forms of economic organization, and hence to an ever more certain sense of how best to deploy technology, allocate labor and capital, and link supply of particular products to demand. Today, on the contrary, it is commonsensical to believe that the way many of these things are done depends on constantly shifting background conditions whose almost insensible mutation can produce abrupt redefinitions of the appropriate way to organize economic activity. (...) For historians, as well as for other social scientists, the study of the economy has become the study of adjustment to ever changing contexts.

The second experience is one of the recombining and interpenetration of different forms of economic organization: the rigid and the flexible, the putatively archaic and the certifiably modern, the hierarchical and the market-conforming, the trusting and the mistrustful. (...) suddenly the repertoire of economic forms deemed appropriate to current conditions contains types such as the small firm which twenty years ago were viewed as close to extinction and combinations of types - such as the small contractor collaborating as an equal with a much larger customer in the design of a new product - which were quite literally unthinkable.”

Sabel and Zeitlin (1997, pp. 1-3)

### **Is it necessary to sacrifice flexibility to achieve more efficiency?**

“The central theme of this book is that the experience of fragility and mutability which seemed so novel and disorienting today has been, in fact, the definitive experience of the economic actors in many sectors, countries and epochs in the history of industrial capitalism. Precisely because they have been aware of the complex dependence of every form of economic organization on multiple and shifting background conditions, they have constantly experimented with institutional designs (...). For the same reasons, they have rarely interpreted economic and technological progress as continual and ineluctable progression towards a single set of practices that in their self-perfection would ultimately pass into a sphere of transhistorical permanency. What we find (...) is an extraordinarily judicious, well-informed and continuing debate within firms, and between them and public authorities, as to the appropriate responses to an economy whose future is uncertain, but whose boundary conditions at least in the middle term are taken to be clear. (...) where many observers in the post-war period saw the economy as steadily increasing in efficiency through the ever more specialized use of resources, and therefore paying an acceptable price in increased rigidity for previously unimaginable increases in well-being, throughout most of the history of industrial capitalism, and again today, the economic actors have tried with considerable success to increase efficiency without jeopardizing and indeed sometimes even increasing flexibility.

Sabel and Zeitlin (1997, p. 3)

### **Reference**

Sabel, Charles F.; Jonathan Zeitlin (1997): *World of possibilities: Flexibility and mass production in Western industrialization*, Cambridge University Press, Cambridge, UK.

## Economic development and knowledge/technology

### Alice Amsden's of economic development

"Economic development is a process of moving from a set of assets based on primary products, exploited by unskilled labor, to a set of assets based on knowledge, exploited by skilled labor. The transformation involves attracting capital, human and physical, out of rent seeking, commerce, and 'agriculture' (broadly defined), and into manufacturing, the heart of modern economic growth. It is in the manufacturing sector that knowledge-based assets have been nurtured and most intensively used. The greater such assets, the easier the shift from primary product production to industrial production (and later to the supply of modern services). A 'knowledge-based asset' is a set of skills that allows its owner to produce and distribute a product at or above prevailing market prices (or below market costs). The requisite skills are both managerial and technological in nature. They are science-based or artisan and are embodied in an individual or firm, depending on the scale of the physical plant and the complexity of the production process. Three generic technological capabilities that nurture knowledge-based assets may be distinguished: production capabilities (the skills necessary to transform inputs into outputs); project execution capabilities (the skills necessary to expand capacity); and innovation capabilities (the skills necessary to design entirely new products and processes)."

Amsden (2001, p. 2)

### Why technology need not diffuse easily and may create divergence

"The nature of technology itself makes knowledge difficult to acquire. Because the properties of a technology cannot necessarily be fully documented, process optimization and product specification remain an art. The managerial skills that comprise such an art are themselves tacit rather than explicit. Technological capabilities that create new products and novel production techniques are part of a firm's 'invisible' assets (...). Such assets allow a firm to sell below competitors' costs and above their quality standards. Because knowledge-based assets are proprietary, intangible and hence difficult to copy, they lead to above-normal profits and earn their owners monopoly rents."

Amsden (2001, p. 5)

"Every latecomer must learn from an established master. But not all learners are equal. As anecdotal evidence on prewar technology transfer suggests, the more backward the learner, the more difficult the transfer. This tendency perpetuates divergence in income between rich countries and poor countries attempting to catch up with the world technological frontier."

Amsden (2001, p. 69)

"Countries that invested heavily in national firms and national skills— China, India, Korea and Taiwan—all had relatively equal income distributions. A national economy may be regarded as an organic whole. The greater income inequality (by social class, race, religion, or region), the more that organic whole is fractured, and the more difficult it is to mobilize support for national business enterprises and firm-specific national skills."

Amsden (2001, p. 18)

"Prewar manufacturing experience emerges as a necessary condition for postwar industrial expansion given that no successful latecomer country managed to industrialize without it."

Amsden (2001, p. 121)

### Inadequateness of comparative advantage theory

"Given imperfect knowledge, productivity and quality tend to vary sharply across firms in the same industry—a fortiori across firms in the same industry in different countries. The price of land, labor, and capital no longer uniquely determines competitiveness. The market mechanism loses status as its sole arbiter, deferring instead to institutions that nurture productivity. Because a poor country's lower wages may prove inadequate against a rich country's higher productivity, the model of 'comparative advantage' no longer behaves predictably: latecomers cannot necessarily industrialize simply by specializing in a low-technology industry."

Amsden (2001, p. 5)

### The West monopolized the high road to industrial development

"The 'rest' followed a 'low road' to industrial development between 1850 and 1950 for lack of proprietary technology and related know-how and skills. Although manufacturing experience accumulated, and the growth rate of output may even have increased, 'the rest' could not industrialize fast enough just to keep pace with the North Atlantic. Few firms had been able to make the 'three-pronged investment' to which (Chandler Jr. 1990) attributes the success of the modern business enterprise: in up-to-date machinery and plants of optimal scale; in managerial hierarchies and technological skills; and in distribution networks."

Amsden (2001, p. 70)

"Before World War II, the accumulation of skills and the growth of firms both lagged and undermined one another. Without modern firms, skills were slow to develop, and without cutting-edge skills, modern firms were slow to form. 'The rest's' *small-scale firms* tended not to be dynamic agents of industrial change, in contradistinction to the developmental role they played in England during the First Industrial Revolution, the socially progressive role they played in Europe's "industrial districts" after World War II (...), and the innovative role they played in the United States in the 1990s."

Amsden (2001, p. 71)

### **'The rest'**

Comprising China, India, Indonesia, South Korea, Malaysia, Taiwan, and Thailand in Asia; Argentina, Brazil, Chile, and Mexico in Latin America; and Turkey in the Middle East.

### **The failure of 'the rest'**

"Without novel products or world-class skills, 'the rest' took a long and halting journey down a low road to industrialization. Devoid of innovative assets, firms lacked credibility with potential investors. Without capital, it was difficult to undertake the three-pronged investment necessary to compete in modern industries: in large-scale plants and up-to-date equipment, in technological capabilities and management teams, and in distribution. Nor did small-scale firms circumvent the need for such investments by modernizing artisan production systems and substituting them for mass production. The extent to which this happened appears to have been negligible. Small-scale firms before World War II, and for most of the postwar period, did not act as an agent of late industrial development. Instead, due to the relative unattractiveness of investing in manufacturing without proprietary skills, high bankruptcy rates and low rates of return prevailed, and these encouraged imprudent financial practices, speculation, cheating, and fraud. The relatively liberal economic system that prevailed throughout 'the rest' before World War II, therefore, was embroiled in its own forms of corruption. After almost one hundred years, there was no obvious, endogenous, organic solution to 'the rest's' economic predicament. It was in this context of industrial growth without industrialization that the developmental state was born."

Amsden (2001, p. 98)

### **Reference**

Amsden, Alice H. (2001): *The rise of "the rest": Challenges to the west from late-industrializing economies*, Oxford University Press, New York.

## On the nature of poverty

### **“1. Poverty Increases during the Initial Phases of Growth**

The process of economic growth in the initial stages of development is generally accompanied by a maldistribution of income and wealth. The beneficiaries of the growth process are generally the active agents in the process who receive benefits while the economically less resilient members of the society, who constitute a significant majority, get left behind. This causes an adverse distribution of income and wealth for those who are already poor and no country that has developed its economy seems to be an exception to this experience.”

Khusro (1999, p. 12)

### **“2. Growth Does Not Trickle Down Easily into the Poverty Zones**

Another characteristic of the growth process is that economic growth does not trickle down easily to the masses, especially in low-growth economies. It is only in the high-growth economies, such as those of the ASEAN region, (before the debacle of 1998) that a high per capita growth rate seems to percolate among the lower rungs of the population and involves them in economic activity, often through the market forces.”

Khusro (1999, p. 13)

### **“3. Price and Quantity Controls Do Not Augment Supplies**

In fact, economic growth trickles down into the poverty zones more through the augmentation of supplies with the market forces rather than through the management of demand, as practised in the controlled and semicontrolled economies. As controlled prices and quantities depress supplies and prolong the controls, these create and multiply the shortages.”

Khusro (1999, p. 13)

“... the fact that there are rich countries at all is quite surprising in the sense that it is unusual. Over most of global history, poverty has been the normal state of affairs for societies.” Vries (2013, p. 11)

## **References**

Khusro, Ali Mohammed (1999): The poverty of nations, Macmillan Press, London.

Vries, Peer (2013): Escaping poverty: The origins of modern economic growth, V&R unipress, Vienna University Press, Goettingen, Germany.

## Why Egypt is poor and England rich (or so they say)

### **Egypt**

“Egypt is poor precisely because it has been ruled by a narrow elite that have organized society for their own benefit at the expense of the vast mass of people.”

Acemoglu and Robinson (2012, p. 3)

### **Great Britain and US**

“Countries such as Great Britain and the United States became rich because their citizens overthrew the elites who controlled power and created a society where political rights were much more broadly distributed, where the government was accountable and responsive to citizens, and where the great mass of people could take advantage of economic opportunities.”

Acemoglu and Robinson (2012, pp. 3-4)

### **England**

...the reason that Britain is richer than Egypt is because in 1688, Britain (or England, to be exact) had a revolution that transformed the politics and thus the economics of the nation. People fought for and won more political rights, and they used them to expand their economic opportunities. The result was a fundamentally different political and economic trajectory, culminating in the Industrial Revolution.” [That easy]

Acemoglu and Robinson (2012, p. 4)

### **The secret of the Industrial Revolution**

“The Industrial Revolution started and made its biggest strides in England because of her uniquely inclusive economic institutions. These in turn were built on foundations laid by the inclusive political institutions brought about by the Glorious Revolution. It was the Glorious Revolution that strengthened and rationalized property rights, improved financial markets, undermined state-sanctioned monopolies in foreign trade, and removed the barriers to the expansion of industry. It was the Glorious Revolution that made the political system open and responsive to the economic needs and aspirations of society.”

Acemoglu and Robinson (2012, p. 208)

### **Reference**

Acemoglu, Daron; James A. Robinson (2012): Why nations fail: the origins of power, prosperity, and poverty, Crown Business, New York.

## **'Institutions' and the wealth of nations**

"Countries differ in their economic success because of their different institutions, the rules influencing how the economy works, and the incentives that motivate people."

Acemoglu and Robinson (2012, p. 73)

### **Inclusive institutions**

"Inclusive economic institutions, such as those in South Korea or in the United States, are those that allow and encourage participation by the great mass of people in economic activities that make best use of their talents and skills and that enable individuals to make the choices they wish. To be inclusive, economic institutions must feature secure private property, an unbiased system of law, and a provision of public services that provides a level playing field in which people can exchange and contract; it also must permit the entry of new businesses and allow people to choose their careers."

Acemoglu and Robinson (2012, pp. 73-74)

"Inclusive economic institutions create inclusive markets, which not only give people freedom to pursue the vocations in life that best suit their talents but also provide a level playing field that gives them the opportunity to do so. (...) Inclusive economic institutions also pave the way for two other engines of prosperity: technology and education. Sustained economic growth is almost always accompanied by technological improvements that enable people (labor), land, and existing capital (buildings, existing machines, and so on) to become more productive. (...) Intimately linked to technology are the education, skills, competencies, and know-how of the workforce, acquired in schools, at home, and on the job. We are so much more productive than a century ago not just because of better technology embodied in machines but also because of the greater know-how that workers possess. (...) The low education level of poor countries is caused by economic institutions that fail to create incentives for parents to educate their children and by political institutions that fail to induce the government to build, finance, and support schools and the wishes of parents and children."

Acemoglu and Robinson (2012, pp. 76-78)

"The ability of economic institutions to harness the potential of inclusive markets, encourage technological innovation, invest in people, and mobilize the talents and skills of a large number of individuals is critical for economic growth."

Acemoglu and Robinson (2012, p. 79)

### **Extractive institutions**

"There is obviously a close connection between pluralism and inclusive economic institutions. But the key to understanding why South Korea and the United States have inclusive economic institutions is not just their pluralistic political institutions but also their sufficiently centralized and powerful states. (...) political institutions that distribute power broadly in society and subject it to constraints are pluralistic. Instead of being vested in a single individual or a narrow group, political power rests with a broad coalition or a plurality of groups. (...) We will refer to political institutions that are sufficiently centralized and pluralistic as inclusive political institutions. When either of these conditions fails, we will refer to the institutions as extractive political institutions."

Acemoglu and Robinson (2012, pp. 80-81)

"Extractive political institutions concentrate power in the hands of a narrow elite and place few constraints on the exercise of this power. Economic institutions are then often structured by this elite to extract resources from the rest of the society. Extractive economic institutions thus naturally accompany extractive political institutions. In fact, they must inherently depend on extractive political institutions for their survival."

Acemoglu and Robinson (2012, p. 81)

### **Reference**

Acemoglu, Daron; James A. Robinson (2012): Why nations fail: the origins of power, prosperity, and poverty, Crown Business, New York.

## Why nations fail

“Nations fail economically because of extractive institutions. These institutions keep poor countries poor and prevent them from embarking on a path to economic growth. This is true today in Africa, in places such as Zimbabwe and Sierra Leone; in South America, in countries such as Colombia and Argentina; in Asia, in countries such as North Korea and Uzbekistan; and in the Middle East, in nations such as Egypt. (...) What they all share is extractive institutions. In all these cases the basis of these institutions is an elite who design economic institutions in order to enrich themselves and perpetuate their power at the expense of the vast majority of people in society.”

Acemoglu and Robinson (2012, pp. 398-399)

“Central to our theory is the link between inclusive economic and political institutions and prosperity. Inclusive economic institutions that enforce property rights, create a level playing field, and encourage investments in new technologies and skills are more conducive to economic growth than extractive economic institutions that are structured to extract resources from the many by the few and that fail to protect property rights or provide incentives for economic activity. Inclusive economic institutions are in turn supported by, and support, inclusive political institutions, that is, those that distribute political power widely in a pluralistic manner and are able to achieve some amount of political centralization so as to establish law and order, the foundations of secure property rights, and an inclusive market economy. Similarly, extractive economic institutions are synergistically linked to extractive political institutions, which concentrate power in the hands of a few, who will then have incentives to maintain and develop extractive economic institutions for their benefit and use the resources they obtain to cement their hold on political power.

These tendencies do not imply that extractive economic and political institutions are inconsistent with economic growth. On the contrary, every elite would, all else being equal, like to encourage as much growth as possible in order to have more to extract. Extractive institutions that have achieved at least a minimal degree of political centralization are often able to generate some amount of growth. What is crucial, however, is that growth under extractive institutions will not be sustained, for two key reasons. First, sustained economic growth requires innovation, and innovation cannot be decoupled from creative destruction, which replaces the old with the new in the economic realm and also destabilizes established power relations in politics. Because elites dominating extractive institutions fear creative destruction, they will resist it, and any growth that germinates under extractive institutions will be ultimately short lived. Second, the ability of those who dominate extractive institutions to benefit greatly at the expense of the rest of society implies that political power under extractive institutions is highly coveted, making many groups and individuals fight to obtain it. As a consequence, there will be powerful forces pushing societies under extractive institutions toward political instability.”

Acemoglu and Robinson (2012, pp. 429-430)

### Reference

Acemoglu, Daron; James A. Robinson (2012): Why nations fail: the origins of power, prosperity, and poverty, Crown Business, New York.

## When was the Great Divergence created?

“The Great Divergence debate is about why Britain and then the West took off but also about why so many countries did not and fell behind.”

Vries (2013, p. 401)

“...many of the supposedly critical distinctions between European and non-European societies melt away when longer-term trends are considered and when one looks with equal care at Western and nonWestern societies. Until 1750, changes in population, agriculture, technology, and living standards were not fundamentally different in eastern Asia from those in western Europe.”

Goldstone (2009, p. 20)

“...the history of material life for most of the last 1,000 or 2,000 years has been one of long ups and downs but with little overall progress. As late as 1800, ordinary workers in England and Holland received roughly the same average earnings as workers in those countries 300 years earlier. Ordinary people in 1800 may have had access to a greater variety of products from expanding local and international trade, but they could not afford any more food or better shelter than their great-great-great-great-grandparents could.”

Goldstone (2009, p. 25)

“As the centuries passed, there were periods of good times for merchants and landlords (who bought and sold foodstuffs and did best when prices were rising) interspersed with periods of good times for ordinary workers (who depended on wages or on subsistence farming combined with craft work and did best when food prices were stable or even declining). World economic history before 1800 shows many ups and downs, differing a bit across different areas and for different groups of people, but with relatively little overall change.”

Goldstone (2009, p. 25)

“If we look at basic measures of the physical well-being of the population—such as life expectancy or the calorie intake of an average family—we find that the Chinese and the English were about equal in 1800, and that both of those societies were well ahead of other regions in Europe such as Italy or Germany.”

Goldstone (2009, p. 26)

“The best way to describe technological innovation and change before 1800 is to say that it was sporadic.”

Goldstone (2009, p. 28)

“... because those innovations remained sporadic and isolated, they could not carry whole societies forward in leaps and bounds as the linked and accelerating technological changes of the past 200 years have done.”

Goldstone (2009, p. 29)

“Britain’s early Industrial Revolution—until 1800—consisted mainly of a substantial expansion of the production of cotton thread by waterpowered spinning factories, increased output and use of coal, the development of a domestic pottery industry capable of creating quality porcelain, and the production of a wide range of iron and steel goods from mediumsize forges. These were all striking advances for Britain, but in many ways were actually a catching up with the advanced civilizations of Asia, which already produced high-quality cotton cloth, porcelain, and cast iron in vast quantities (...) In most parts of Asia during the seventeenth and eighteenth centuries, the silk, cotton, and porcelain industries underwent a huge expansion of manufacturing that dwarfed anything seen in Europe. In these centuries the English, Dutch, Portuguese, and Spanish sent hundreds of ships bearing silver to Asia, ships whose goal was to return laden with Indian and Chinese cotton cloth and with Chinese silks and porcelains.”

Goldstone (2009, p. 32)

“... by 1800, both Britain and China had experienced substantial changes in their economies and seen major increases in their output of both foodstuffs and cotton textiles. Yet neither had experienced any true breakthrough to a higher standard of living. Both societies were still operating within the range of the long-term cycles of prior centuries as to how well people lived. Long-term ups and downs in climate, population, and earnings produced ups and downs in living standards as well. The true breakthroughs that created a different world still lay ahead.”

Goldstone (2009, p. 33)

“Britain’s rise as an industrial power was relatively late and in many ways unique, quite distinct from the broader trends in many other countries of Christian and Protestant religion. For most of the last thousand years, it was scholars, craftsmen, and seafarers from China, India, Persia, and the Islamic states in Asia and Africa who were the drivers of invention, economic growth, and global trade.”

Goldstone (2009, pp. 46-47)

“The notion that the rise of the West represented a gradual increase in the wealth of Western societies—so that by the sixteenth or seventeenth century Europeans had already become substantially richer than they had been in the Middle Ages, and richer too than rival societies in Asia—is not supported by the evidence. In fact, there were rich and poor areas in both Europe and Asia, and the richest areas in both continents were quite comparable in most aspects of material well-being until the 1800s.”

Goldstone (2009, p. 79)

“... when we compare living standards across Europe and Asia, we find that until about 1800, living standards were fairly similar across the major nations of both continents. Indeed, around AD 1600, Asian societies may have been slightly in the lead. But from 1800 to 1950, we see a great divergence. The leading areas of Europe raised their incomes very dramatically, while the lagging areas declined, so that by 1900 the richest areas of Europe (England, Belgium, and the Netherlands) are perhaps three or four times richer than the poorer areas of southern Europe. The major civilizations of Asia—Japan, India, and China—also appear to have stagnated or declined in income after 1800, so that by 1900 the richest areas of Europe greatly surpassed the major Asian societies as well. The existence of a rich Europe and a poor Asia is thus, historically speaking, a relatively recent phenomenon. From 1800 to 1950, explosive growth in incomes and urbanization in northwest Europe combined with substantial decline or stagnation in Asia to reverse their respective positions in the world economy and create the disparity that became known as the rise of the West.

(...) the secret to this divergence appears strongly rooted in domestic productivity. That is, the richest parts of Europe in 1800 were those in which agricultural productivity had caught up to Asian productivity levels. Then after 1800, the richest parts of Europe were the regions that industrialized, complementing high levels of agricultural productivity with vastly increased productivity in manufacturing and industry. In other words, the richest European nations did not become rich because they took more treasure from other parts of the world or because they had empires or slavery (...). Rather, it was because workers in the richer countries—especially England, but also the Netherlands and Belgium— became more productive than workers elsewhere in Europe and more productive than workers anywhere in the world.”

Goldstone (2009, p. 95)

“The main message of this book has been that the rise of the West was not in any way based on a general European superiority over other regions or civilizations of the world. Europeans were not wealthier, more advanced technically or scientifically, or better at manufacturing and commerce than the major societies in Asia. Until 1500, Europe was somewhat lagging in wealth, technology, and science. Even as late as 1700, it was just catching up to the more advanced regions of Asia.”

Goldstone (2009, p. 166)

“... the West has always existed in a state of variance from the rest of the world’s cultures.”

Duchesne (2011, p. ix)

“the roots of the West’s ‘restless’ creativity and libertarian spirit should be traced back to the aristocratic warlike culture of Indo-European speakers. The Indo-Europeans were a distinctively pastoral, horse-riding, mobile, and war-oriented culture governed by a spirit of aristocratic egalitarianism (...) the primordial basis for Western uniqueness lay in the ethos of individualism and strife. For Indo-Europeans, the highest ideal of life was the attainment of honorable prestige through the performance of heroic deeds.”

Duchesne (2011, p. x)

“... no matter how far back we may push for the origins of capitalism, industrial capitalism, in which the large-scale use of inanimate energy sources allowed an escape from the common constraints of the preindustrial world, emerges only in the 1800s. There is little to suggest that western Europe’s economy had decisive advantages before then, either in its capital stock or economic institutions, that made industrialization highly probable there and unlikely elsewhere.”

Pomeranz (2000, p. 16)

“Identifying the Great Divergence with the emergence of modern economic growth has some important implications. It means that explaining it is not identical to explaining capitalism as is often simply assumed in texts about ‘the rise of the West’. Not only because conceptually modern economic growth and capitalism - here for the sake of convenience and to some extent erroneously defined as ‘the market economy’ - are two distinct phenomena, even when they in practice are often related. There are several examples of capitalist societies (a very complex, multi-faceted and debated concept anyhow) that did not ‘automatically’ take off into modern economic growth.”

Vries (2013, p. 24)

## References

Goldstone, Jack A. (2009): *Why Europe? The Rise of the West in world history, 1500-1850*, McGraw-Hill, New York.  
Duchesne, Ricardo (2011): *The uniqueness of Western civilization*, BRILL, Leiden, The Netherlands.

Pomeranz, Kenneth (2000): *The Great Divergence: China, Europe, and the Making of the Modern World Economy*, Princeton University Press, Princeton, New Jersey.

Vries, Peer (2013): *Escaping poverty: The origins of modern economic growth*, V&R unipress, Vienna University Press, Goettingen, Germany.

## How Malthusian was the past?

“... most Asian societies successfully limited fertility within marriage, whereas northern European societies limited fertility by delaying access to marriage. Both systems worked to keep fertility and population growth at moderate levels.”  
Goldstone (2009, p. 76)

“... even though societies in Europe and Asia had very different ways of regulating marriage and family life, these differences did not produce any marked differences in overall rates of population growth. To be more precise, from 1500 to 1750, the increase in population in England was approximately 130 percent, while that in China was 125 percent.”  
Goldstone (2009, p. 77)

“... we find that life expectancy in virtually all preindustrial societies was remarkably low—lower than even in the poorest countries of the world today. This is because infant mortality—the percent of children who died in their first year of life—was so incredibly high. In preindustrial societies, infants died in large numbers from diseases that are easily treated today, such as diarrhea or malnutrition. Because so many died in early childhood, average lifespans were short—life expectancy was not much more than 30 years, compared with 50 years in the poorest societies today. This does not mean that most people lived to be only 30 years old; rather, this means that for every person who survived to age 60, another one died within their first year of life, leading to an average lifespan of about 30 years.”  
Goldstone (2009, pp. 77-78)

Country or City (population)	Time Period	Life Expectancy ( $e_0$ )
England	1750–1800	37
Rural China (Liaoning, males)	1792–1867	36
France	1800	34
Rural Japan	1776–1815	33
The Netherlands	1800	32
Rural China (Anhui, males)	1300–1880	31
France	1750	28
Roman Egypt (villagers)	AD 11–257	28
England (tenants)	1300–1348	less than 28
London	1750–1799	23
Beijing (males)	1644–1739	27

Goldstone (2009, p. 78)

“Wages moved up and down over time in both Europe and Asia. Yet one of the surprising things about the preindustrial past is that the average level of real wages—that is, what a worker’s earnings would buy in terms of food, clothing, and other necessities—changed fairly little across many centuries.”  
Goldstone (2009, p. 79)

“... we find that around the world from 1500 to 1800 the basic story was much the same—living standards were shaped by agricultural productivity, and agricultural productivity depended on techniques for intensifying agriculture. Where agricultural intensification was achieved by new crop rotations, new seed varieties, and increased use of fertilizers, productivity and living standards could be raised to, or maintained at, relatively high levels. But without such intensification, population increases over time meant that productivity and incomes would fall.”  
Goldstone (2009, p. 91)

“... economic history of the world prior to 1800 was one of cycles and waves of moderate change.”  
Goldstone (2009, p. 97)

“If the tendency to reproduce is as strong as Malthus supposes, then how is it that family lines so often become extinct? This occurs even in families where want is unknown. In an aristocracy such as England, hereditary titles and possession offer every advantage. Yet the House of Lords is kept up over the centuries only by the creation of new titles.”  
George (1879, p. 60)

“In India now, as in times past, only the most superficial view can attribute starvation and want to the pressure of population on the ability of land to produce subsistence. Vast areas are still uncultivated, vast mineral resources untouched. If the farmers could keep some capital, industry could revive and take on more productive forms, which would undoubtedly support a much greater population. The limit of the soil to furnish subsistence certainly has not been reached. It is clear that the true cause of poverty in India has been, and continues to be, the greed of man—not the deficiency of

nature. What is true of India is true of China. As densely populated as China is in many parts, the extreme poverty of the lower classes is not caused by overpopulation. Rather, it is caused by factors similar to those at work in India.”  
George (1879, p. 64)

“Neither in India nor China, therefore, can poverty and starvation be charged to the pressure of population against subsistence. Millions are not kept on the verge of starvation (and occasionally pushed beyond it) by dense population—but rather by causes that prevent the natural development of social organization and keep labor from getting its full return.”  
George (1879, p. 65)

“... the essence of that theory [Malthus’] is that whatever the capacity for production, the natural tendency of population is to press beyond it. This produces that degree of vice and misery necessary to prevent further increase. So as productive power increases, population will correspondingly increase. And in a little time, this will produce the same results as before. I assert that nowhere is there an example that will support this theory. Nowhere can poverty properly be attributed to population pressing against the power to procure subsistence using the then-existing degree of human knowledge. In every case, the vice and misery generally attributed to overpopulation can be traced to warfare, tyranny, and oppression. These are the true causes that deny security, which is essential to production, and prevent knowledge from being properly utilized.”  
George (1879, p. 65)

“Contrary to the long-held view that the classical economy was technologically and economically moribund (...), it is now becoming increasingly evident that the level of production and productivity in AD 150 was as high as it was in 1300, and possibly as high as in 1700. The evidence consists in the finding that the territory of western Europe was more thickly settled with farms and small towns than was previously thought possible, and in the recognition that the huge deposits of amphorae employed to transport wine and olive oil imply a correspondingly high degree of specialisation in the regions from which these commodities were exported.”  
Grantham (1999, p. 222)

“There is no longer any doubt that the classical economy was a market economy supported by an abundant, though now largely vanished, commercial documentation. When combined with evidence demonstrating the high level of classical technological achievement (...) these findings point to the essential continuity of the period stretching from the classical economy to the late eighteenth century. Perhaps the most striking example of this continuity is to be found in the analysis of lead and copper aerosols deposited in the Greenland ice cap, which indicate levels of production that were as high around AD 150 as they were in 1750.”  
Grantham (1999, p. 222-23)

“If one pauses to ponder on all that Europe accomplished in the nine centuries of her ascent, one cannot help being filled with amazement and admiration (...) there was, above all, an endless series of superb accomplishments in all fields of human activity. The medieval cathedrals; the paintings of the Renaissance; the music of Mozart, Beethoven, and Bach; the poetry of Dante; the prose of Boccaccio and Chaucer; the tragedies of Shakespeare; the philosophy of Aquinas, Descartes, and Kant; the wit of Montaigne and Voltaire; the medieval clocks; the drawings of Leonardo da Vinci; the innumerable technological innovations of the Middle Ages and the Renaissance; the steam engine; the microscope; the discoveries of microbiology, the miracles of chemistry; the Suez canal; the business techniques, from the check to the stock exchange; the condemnation of torture; the assertion of the principle of human freedom and rights; the parliamentary system—there is no end to the list of Europe’s accomplishments in the period AD 1000–1900.”  
Cipolla (1993 p. 216)

“In all likelihood, the Greek and Roman technological “failure” has been exaggerated. All too often we tend to identify technology with mechanics, because our civilization is essentially mechanical. Political and administrative organization, military organization, architecture and road construction, even artistic products such as frescoes, bear the marks of technology, and in none of these fields could the Greeks and Romans be considered failures.”  
Cipolla (1993 p. 107)

“A schematic inventory of the main technological developments of the West from the sixth to the eleventh century should include:

- a. from the sixth century: spread of the water mill
- b. from the seventh century: spread, throughout northern Europe, of the heavy plow.
- c. from the eighth century: spread of the crop rotation system
- d. from the ninth century: spread of the horseshoe and of a new method for harnessing draft animals

In relation to these developments three points should be made: First, the innovations just listed were not, properly speaking, inventions. (...) What the Europeans displayed from the sixth to the eleventh centuries was not so much inventive ingenuity as a remarkable capacity for assimilation. They knew how to seize on good ideas and apply them to large-scale productive activity. Perhaps this attitude was influenced by the fresh outlook of the German invaders: the pride

which drove the Romans and the Chinese to describe as barbarians all those who did not belong to their empires made them unreceptive to foreign ideas. Second, the innovations mentioned above were all linked to agricultural activity and, in combination, strengthened each other. (...) Finally, some of these innovations allowed for a more effective use of horse power.”

Cipolla (1993 p. 108)

“The proliferation and increasing power of water mills and windmills, like the increased use of horses, made available more energy for productive uses. Unlike horses, however, the mills supplied inanimate energy. Their widespread use marked the beginning of the breakdown of the traditional world in which man had to depend for power on animal or vegetable sources of energy. It was the distant announcement of the Industrial Revolution.”

Cipolla (1993 p. 112)

### **Reference**

Cipolla, C. M. 1993: *Before the Industrial Revolution: European Society and Economy, 1000–1700*, 3rd edition, Routledge, London.

George, Henry (1879): *Progress and Poverty*

Goldstone, Jack A. (2009): *Why Europe? The Rise of the West in world history, 1500-1850*, McGraw-Hill, New York.

Grantham, George (1999): “On the macroeconomics of pre-industrial economies”, *European Review of Economic History* 3(2), 199-232.

## Why did the West rise?

“To understand what truly lay behind the rise of the West, we therefore need to look more closely at two major factors that led to the rise of modern industry: the power of the state, and the development of industrial technology...”  
Goldstone (2009, p. 95)

“If there was one key ingredient to creating a new level of productivity growth and new kinds of economic activity that broke from the cycles of agrarian societies that had dominated the last 10 centuries, that ingredient was new ideas.”  
Goldstone (2009, p. 116)

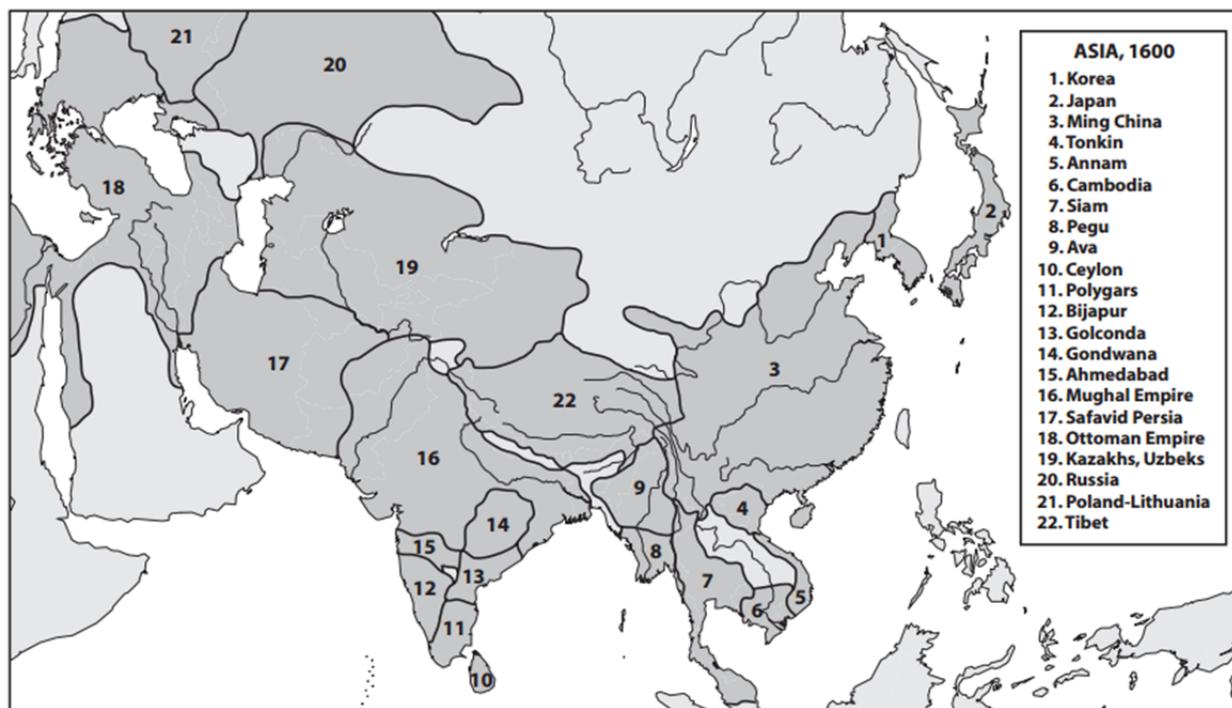
“The enforcement of rigid orthodoxy led to stagnation and even the loss of knowledge. Previous advances in mathematics were lost and— despite the ending of serfdom, the growth of market towns, the expansion of manufacturing, and the substantial agricultural growth in China that had occurred under the Manchus—new scientific and mechanical inventions, which had marked every previous dynastic period in Chinese history, were almost entirely absent. In Spain, Portugal, and Italy, the Catholic Counter-Reformation too began to set itself against innovation in thought and learning.”  
Goldstone (2009, p. 118)

“From the early 1600s onward Europe experienced a striking increase in the number of scientific and technological innovations, becoming the world’s leading center of technical change.”  
Goldstone (2009, p. 121)

“It was only from about 1850 onward that steam-powered factories, farm machinery, construction equipment, railways, and steamships so changed the face of production as to create widespread improvements in living standards in Europe, while out-competing manufacturing and production elsewhere. Also, it was only from about 1850 onward that new inventions in chemistry, communications (the telegraph and telephone), electrical and gas power, and new construction materials and techniques changed our sense of what was possible in material life.”  
Goldstone (2009, p. 123)

### Trade not determinant

“... the notion that an industrial revolution grew up in a British economy that was based on low taxes and free trade is quite mistaken. The Industrial Revolution developed in a British economy that managed to grow at remarkable rates despite facing the highest tax rates, the highest tariffs, and one of the stiffest regulatory regimes on shipping in Europe, if not the entire world. The big difference in Britain’s economy was not the level of taxes or tariffs, but how they were spent. After 1688, the Parliament—and the Bank of England, which Parliament established to manage the royal debt—was able to make sure that these high tax revenues were not squandered on palaces and playthings for the king and queen, but were instead directed to payment on state debts and funding for the Royal Navy.”  
Goldstone (2009, p. 113)



Goldstone (2009, p. 100)

### **Political competition not determinant**

“... both Europe and Asia had dozens of competing states. In both areas the large number of states led to constant military competition and allowed diverse views and religions to flourish despite the efforts of individual rulers to foster religious uniformity within their own countries.”

Goldstone (2009, p. 102)

“The changes began in a handful of industries that were concentrated mainly in the northern and midlands counties of England; then extending to Scotland, Cornwall, and Wales; and later to Belgium, Switzerland, France, and other parts of Europe. These industries included producers of cotton textiles, iron and steel (including metal products from knives to buckles to engines and railways), and pottery; companies that mined coal and other minerals; and transportation firms that built and operated canals, railroads, steamboats, and steam engines. For all of these items, new technology changed one of the basic tenets of economics—the law of diminishing returns.”

Goldstone (2009, p. 125)

“What created real change during the nineteenth century was that, as these new and transformed industries spread their impact throughout Britain, further innovations spread to other industries (agriculture, food processing, construction), and then whole new industries (chemicals, electricity, telephone and telegraph, rubber) arose. These were then complemented by improvements in insurance, financing, security, and information exchange that further expanded the scope of trade and lowered the costs of transactions, creating worldwide markets for legions of products. As these new industries spread through Europe and then the world, they changed the character of the global economy and raised living standards wherever they came to dominate.”

Goldstone (2009, p. 126)

“What was common to this entire process, beginning around 1700, was the acceleration of innovation. The powers behind this vast army of industrialization were many—improvements in the education and training of workers, the use of finance and capital to fund new industries, and new legal and corporate forms for business entities. But behind every major improvement in technique lay successful innovations—the results of searching for more efficient, powerful, and novel ways of making and moving goods.”

Goldstone (2009, p. 128)

“What transformed Europe, and then the world, was a constantly growing and linked set of innovations in agriculture, transport, manufacturing, financing, machining, education, and marketing. The pace of change not only began to increase in the later eighteenth and early nineteenth centuries, but it has continued to increase to the present day. When we think of the pattern of innovation responsible for the rise of the West, we should not think in terms of a series of discrete inventions, but instead of waves of continually advancing change in many fields, each amplifying the effects of other changes.”

Goldstone (2009, p. 128)

“In sum, to explain the rise of the West, we cannot identify any overall ‘European advantage’ prior to 1700 in material well-being or technology. Nor can we point to a handful of significant inventions. Rather, economic and industrial advance was broader and deeper, sweeping away older ways of doing things. What we need to explain is the emergence of a remarkably widespread desire and ability to innovate, resulting in thousands of innovations.”

Goldstone (2009, p. 129)

“What created a different path for Europe was a combination of six unusual factors. First, a cluster of remarkable new discoveries led Europeans to question and eventually reject the authority of their ancient and religious texts to a degree not found in any other major civilization. (...) Second, Europeans developed an approach to science that combined experimental research and mathematical analysis of the natural world (...) The third key factor was the infusion of the British Lord Chancellor Francis Bacon’s ideas regarding evidence, demonstration, and the purpose of scientific investigation. (...) A fourth key factor was the development of an instrument-driven approach to experiment and observation. (...) A fifth key factor was a climate of tolerance and pluralism, rather than of conformity and state-imposed orthodoxy, and of Anglican Church support for the new science. (...) The sixth key factor was the easy support for entrepreneurship and the close social relations among entrepreneurs, scientists, engineers, and craftspeople.”

Goldstone (2009, pp. 167-169)

“Given that so many different conditions had to come together, it should be no surprise that the Industrial Revolution started only in one time and place. (...) Thus the development of modern economic growth in Britain must be seen as a *contingent* process”

Goldstone (2009, p. 170)

“Only after the British had demonstrated the importance of pluralism, technical education, experimental science, and business innovations based on scientific engineering to economic advance did the rest of Europe set out to imitate it.

Modern economic growth, based on an educated workforce, freedom of ideas, technological innovation, and the application of scientific engineering to industry, began to spread.”  
Goldstone (2009, p. 172)

“The question is why was the West so dynamic and original in empire-making, warfare, political theory, philosophy, architecture, and poetry? Why was it that the same England that created the greatest maritime empire in history cultivated religious toleration, freedom of expression, and representative government?”  
Duchesne (2011, p. 93)

“In 1807 the British Parliament outlawed slavery in the Empire; the first nation to do so in history. Why?”  
Duchesne (2011, p. 94)

“Our book offers a new explanation for the distinctive patterns of economic change in China and Europe. We argue that conventional arguments are either unfounded or can be reduced to the consequences of differences in political scale: although both China and Europe experienced long periods of unification and fragmentation, empire was the norm in China, while division prevailed more often in Europe. For much of its history, Europe was poor because it was at war. The rise of capital-intensive methods of production in Europe was the unintended consequence of persistent political strife. In contrast, China, which was often peaceful and unified, developed large-scale markets and took advantage of the division of labor. It was only after 1750 that the advantages of machine-based, capital-intensive methods of production became apparent. Before that time the recipes for growth of the Qing emperors were commonsense everywhere: promote the expansion of agriculture, keep taxes low, and do not interfere with internal commerce.”  
Laurent and Wong (2011, pp. x-xi)

“What critics like Hobson refuse to accept is the cumulative, self-reinforcing process of assimilation, innovation, and invention set in motion in Europe from about the twelfth century onward in all facets of life. Europe not only learned and improved upon the practical sciences and techniques of China, it also absorbed and bettered the theoretical sciences of Islamic civilization.”  
Duchesne (2006, p. 79)

“It would be a deep misjudgment to conceive the rise of the West as a cultural process consisting essentially in the assimilation of inventions and ideas diffused from the more advanced East. By the early modern era, European civilization was about to affirm itself in a continuous sequence of intellectual and religious convulsions—the Renaissance, the Reformation, the Scientific Revolution, the Enlightenment—that would bring Western peoples unprecedented freedom, power, worldly expansion, breadth of knowledge, and depth of insight. (...) What requires explanation is why Western culture, in contrast to the virtues of calmness, beatitude, and serene acceptance of the order of being (deemed to be beyond the ability of man to alter) one finds in Eastern religions, has always been charged with tension, has always insisted that the understanding of being lies within our grasp and that the nature of the universe can be penetrated with the instrument of human cognition.”  
Duchesne (2006, pp. 88-89)

“... while in Korea more than a hundred books were printed during the thirty-two-year reign of the emperor Sejong who assumed the throne two decades after the metal-type press was invented in 1403, and who decided to devise a script more suitable to printing, there followed no revolution (...) In Europe, by contrast, there was an explosion of books printed by movable type the moment Gutenberg published the first printed book, his Bible in 1452–1455.”  
Duchesne (2006, p. 83)

“The rise of the Western world was the ascendancy of a relatively backward part of the world to world hegemony between the tenth and the eighteenth centuries.”  
North (2005, p. 127)

“The countries in which capitalism took root early were middle-sized powers characterized by limited monarchy, notably Venice, the Netherlands, and England. These smaller countries had to free up their capital markets in order to better raise funds for military purposes, developing institutions such as a central bank that gave their governments the credibility to borrow money at about 1/3 the interest cost of France and Spain. In the long run, this facilitated the development of capitalism in these countries. (...) Unlike Europe, many other geographical areas, such as China, India, Japan, and the Ottoman Empire, were ruled by a single power (...) the necessary conditions for early capitalist success seem to include (1) limited monarchy or rule of law combined with (2) considerable existential challenges, and (3) relatively scarce factor endowments.”  
Scott (2011, p. 601-602)

“The central theme of the book is that the rise of the West can be explained by decentralization. That is, there was a gradual evolution of a set of institutions that permitted the economic sphere to become autonomous from the political-military sphere. The development of favorable institutions promoted a freedom to experiment in developing

new forms of organization and of innovation. In addition, the development of a morality on the part of those who engaged in economic activity induced trust and contract fulfillment.”  
Rosenberg and Birdzell (1986)

“... the evolving, competitive structure of western economies and the gradual emancipation of the economic sphere from the politics of mercantilism permitted and encouraged rapid economic growth.”  
Rosenberg and Birdzell (1986)

“The rise of the Western world was, in effect, a success story in which the sequential evolution of beliefs modified by experiences gradually resulted in the changes producing modern economic growth. It was a trial and error process interlaced with good luck.”  
North (2005, p. 146)

“Market dependency, market imperatives and the social property form of capital (...) emerged as the unintended consequences of a long-term process of economic agents pursuing short-term economic ends.”  
Žmolek (2013, p. 5)

“Western rule itself was neither locked-in nor accidental. It would make more sense to call it probable, the most likely result.”  
Morris (2010, p. 572)

“The fact that the overwhelming military might of various nomadic forces did not penetrate Western Europe after the Magyar invasions was a crucial variable the gradual transition from feudalism to capitalism. The dynamic of recurring nomadic invasions, which only occasionally brought about the destruction of Empires (e.g., Sung China in the 13th century or the Sultanate of Delhi in the late 14th century), sapped enormous amounts of energy and resources out of the Asian state polities, which in the long run limited their resources for overseas expansion and to a certain extent, also limited their ability to effectively resist their future incorporation into the capitalist world-economy.”  
Mielants (2007, pp. 159-160)

“The West rules because of geography. Biology tells us why humans push social development upward; sociology tells us how they do this (except when they don't); and geography tells us why the West, rather than some other region, has for the last two hundred years dominated the globe. Biology and sociology provide universal laws, applying to all humans in all times and places; geography explains differences.”  
Morris (2010, p. 557)

“Adding sociology to biology explains much of the shape of history, telling us how people have pushed social development upward, why it rises quickly at some times and slowly at others, and why it sometimes falls. Yet even when we put them together, biology and sociology do not tell us why the West rules. To explain that, we need geography. I have stressed a two-way relationship between geography and social development: the physical environment shapes how social development changes, but changes in social development shape what the physical environment means.”  
Morris (2010, p. 560)

“Easterners could have discovered America in the fifteenth century (...) but geography always made it more likely that Westerners would get there first. Easterners had far more to gain by sailing toward the riches of the Indian Ocean than into the empty Pacific and by pushing inland into the steppes (...). In the seventeenth century the expansion of the cores changed the meanings of geography more dramatically than ever before. Centralized empires with muskets and cannons closed the Inner Asian steppe highway that linked East and West, ending nomadic migration and effectively killing one of the horsemen of the apocalypse. On the Atlantic, by contrast, the oceanic highway that western European merchants had opened fueled the rise of new kinds of markets and raised entirely new questions about how the natural world worked. By 1700 social development was again pressing the hard ceiling, but this time (...) disaster was held at bay long enough for western European entrepreneurs to respond to the incentives of the oceanic highway by unleashing the awesome powers of coal and steam. Given enough time, Easterners would probably have made the same discoveries and had their own industrial revolution, but geography made it much easier for Westerners...”  
Morris (2010, p. 564-5)

“Another variable that was crucial to the “Rise of the West” from the 13<sup>th</sup> century onward was the growing strength of multiple city-states, which indirectly increased the bargaining power of tenants, employees, and peasants vis-à-vis the rural nobility.”  
Mielants (2007, p. 157)

“The origins of modernity —capitalism and citizenship— can be properly located within the European city-states and the subsequent nation-states that were formed out of imperialism and warfare (...) within the dynamics of ceaseless capital

accumulation, and not among the great civilizations of Northern Africa, India, or China. Though it is true that up to the late 18th century, living standards, degrees of commercialization, agricultural yields, and protoindustrialization were no more advanced in Western Europe than in many other parts of the world, and one therefore can speak to a certain extent of “multiple early modernities” (...), military power gradually concentrated in the hands of European (mercantile) elites first enabled, and then subsequently guaranteed, increasing returns and market expansion both within Europe and ultimately in the non-European world.”  
Mielants (2007, p. 161)

“... western Europe, was able to escape the proto-industrial cul de sac and transfer handicraft workers into modern industries as the technology became available. It could do this, in large part, because the exploitation of the New World made it unnecessary to mobilize the huge numbers of additional workers who would have been needed to use Europe’s own land in much more intensive and ecologically sustainable ways.”  
Pomeranz (2000, p. 264)

“ ‘why, within Europe, it was its Northwestern part that spearheaded the rise of Europe’? The conclusion from this investigation is: ‘Because of physical geography, which had endowed north-western Europe – more broadly called lowland Europe here – with easier and cheaper transportation.’ Hopefully, we have by now established that link between geography and economic integration. In Acemoglu’s account, the decisive geographic determinant for early economic development is access to the Atlantic, while the trade that arguably induced institutional change was the overseas trade with the colonies. Here, a similar argument can be made, in which the geographical determinant is not access to the Atlantic, but being part of lowland Europe more generally. And instead of colonial trade, it is the higher levels in intra-European trade that triggered institutional change and economic change.”  
Studer (2009)

“My view would be that with coal and especially steam Britain entered a new economic regime with unheard of potential for growth, whereas the Dutch Republic with all its institutional modernity 'only' presented the highest but finite last stage of traditional economic growth.”  
Vries (2013, p. 24)

“Modern civilization owes its superiority to the growth of equality with the growth of association. Two great causes contributed to this – the splitting up of concentrated power into innumerable little centers by the influx of the Northern nations, and the influence of Christianity. Without the first there would have been the petrification and slow decay of the Eastern Empire, where church and state were closely married and loss of external power brought no relief of internal tyranny. And but for the other there would have been barbarism, without principle of association or amelioration. The petty chiefs and allodial lords who everywhere grasped local sovereignty held each other in check.”  
George (1917, p. 75)

“In her efforts for the abolition of slavery; in her Truce of God; in her monastic orders; in her councils which united nations, and her edicts which ran without regard to political boundaries; in the lowborn hands in which she placed a sign before which the proudest knelt; in her bishops who by consecration became the peers of the greatest nobles; in her “Servant of Servants,” for so his official title ran, who, by virtue of the ring of a simple fisherman, claimed the right to arbitrate between nations, and whose stirrup was held by kings; the Church, in spite of everything, was yet a promoter of association, a witness for the natural equality of men.”  
George (1917, p. 76)

“It is not the abundance of competition or entrepreneurship or ideas for technological innovations that allowed the West to accelerate the growth rates of productivity by an order of magnitude; it is first and foremost the abundance of savings and investment that resulted from growing income inequalities and allowed an increase in the capital/labour ratio and the casting in metal of ideas for new products and technologies. To put it differently, the West became rich not due to its inventiveness and entrepreneurial spirit, but due to the cruel and merciless dismantling of community that previously provided social guarantees to the poorest.”  
Popov (2015, p. 2)

“... if there is a single conjunctural factor or moment explaining Britain’s –and later Europe’s– rise to global supremacy, it was Britain’s colonisation of India.”  
Anievas and Nişancioğlu (2015, p. 247)

“My thesis—echoing but extending that of Blaut—is that the West first bought itself a third-class seat on the Asian economic train, then leased a whole railway carriage, and only in the nineteenth century managed to displace Asians from the locomotive.”  
Frank (1998, p. 37)

“CLIMBING UP ON ASIAN SHOULDERS. So how did the West rise? The answer (...) is that the Europeans bought themselves a seat, and then even a whole railway car, on the Asian train (...) the Europeans somehow found and/or stole, extorted, or earned the money to do so. Again, how so? (...) The most important answer is that Europeans obtained the money from the gold and silver mines they found in the Americas. The secondary answer is that they “made” more money, in the very good business first of digging up that silver—or more accurately, obliging the indigenous peoples of the Americas to dig it up for the Europeans. The Europeans also engaged in a variety of other profitable businesses they ran in—and to—the Americas. These were first and foremost the slave plantations in Brazil, the Caribbean, and the North American South; and, of course, the slave trade itself to supply and run these plantations. (...) Europeans were able to make still more money selling their own European-made products to these and other people in the Americas, products for which Europe otherwise would have found no other market, since they were not competitively salable in Asia.”

Frank (1998, pp. 277-278)

“Without that [the American] silver—and, secondarily, without the division of labor and profits it generated in Europe itself—the Europeans would not have had a leg, or even a single toe, to stand on with which to compete in the Asian market. Only their American money, and not any “exceptional” European “qualities,” which, as Smith realized even in 1776, had not been even remotely up to Asian standards, permitted the Europeans to buy their ticket on the Asian economic train and/or to take a third-class seat on it.”

Frank (1998, p. 282)

“Certainly, the Europeans had no exceptional, let alone superior, ethnic, rational, organizational, or spirit-of-capitalist advantages to offer, diffuse, or do anything else in Asia. What the Europeans may have had (...) is some (...) advantages of “backwardness” afforded by their position (...) at the (semi-)periphery of the world economy! So how is it that this otherwise apparently hopeless European gamble in Asia panned out—and finally hit the jackpot? Only because while the Europeans were gathering strength from the Americas and Africa, as well as from Asia itself, Asian economies and polities were also becoming weakened during part of the eighteenth century—so much so that the paths finally crossed (...) at about 1815.”

Frank (1998, p. 283)

“... these technological developments of the industrial revolution should not be regarded as only European achievements. Instead, they must be understood more properly as world developments whose spatial locus moved to and through the West at that time after having long moved about the East. The relevant question is not so much what the “distinctive” European features or factors are of the industrial revolution as how and why this industrial shift took place from East to West (...) the answers to the reasons for this shift must be sought in both the decline of the East and in the rise of the West.”

Frank (1998, p. 285)

“The argument—and the evidence—is that world development between 1400 and 1800 reflects not Asia's weakness but its strength, and not Europe's nonexistent strength but rather its relative weakness in the global economy. For it was all these regions' joint participation and place in the single but unequally structured and unevenly changing global economy that resulted also in changes in their relative positions in the world. The common global economic expansion since 1400 benefited the Asian centers earlier and more than marginal Europe, Africa, and the Americas. However, this very economic benefit turned into a growing absolute and relative disadvantage for one Asian region after another in the late eighteenth century. Production and trade began to atrophy as growing population and income, and also their economic and social polarization, exerted pressure on resources, constrained effective demand at the bottom, and increased the availability of cheap labor in Asia more than elsewhere in the world. Europe and then also North America (and if we wish to separate it out, also Japan at the other end of Eurasia) were able to take advantage of this pan-Asian crisis in the nineteenth and twentieth centuries. They managed to become Newly Industrializing Economies, first through import substitution and increasingly also by export promotion to and within the global world market. Yet this success, which was based on their previous marginality and relative “backwardness” in the global economy, may also prove to be relatively short-lived.”

Frank (1998, pp. 318-319)

“Modern industry has established the world market, for which the discovery of America paved the way. This market has given an immense development to commerce, to navigation, to communication by land. This development has, in its turn, reacted on the extension of industry; and in proportion as industry, commerce, navigation, railways extended, in the same proportion the bourgeoisie developed, increased its capital, and pushed into the background every class handed down from the Middle Ages.”

Marx and Engels (1848)

“The bourgeoisie cannot exist without constantly revolutionising the instruments of production, and thereby the relations of production, and with them the whole relations of society. Conservation of the old modes of production in unaltered form, was, on the contrary, the first condition of existence for all earlier industrial classes (...).The need of a constantly expanding market for its products chases the bourgeoisie over the whole surface of the globe. It must nestle everywhere, settle everywhere, establish connexions everywhere.”

Marx and Engels (1848)

“Modern bourgeois society with its relations of production, of exchange and of property, a society that has conjured up such gigantic means of production and of exchange, is like the sorcerer, who is no longer able to control the powers of the nether world whom he has called up by his spells.”

Marx and Engels (1848)

“The Ricardian account of Europe's history stresses technological change, population movements and diminishing returns as the springs of economic change. The market account puts the emphasis on coordination failure and increasing returns. No doubt both effects have been always present, but there is reason to think that the economics of increasing returns dominated those of diminishing returns in the history of the western economy during its agrarian phase. Because this economics implies significant sensitivity to shocks affecting the costs of trade, an economic history that incorporates them must be attentive to fiscal, political and monetary events that influenced the ability of merchants to organise production over a large area. This kind of economic history reopens the door to an integration of political and economic history by re-emphasising the role of political integration and dynastic conflict in making and unmaking Europe's economic space. In this sense, the highly endogenised search-equilibrium paradigm holds out the promise of a new narrative of the 'rise of the West'.”

Grantham (1999, p. 226)

“Over the period 1700–1800, most of Western Europe was on a trajectory away from the Malthusian limitations of the old regime as a result of sustained improvements in both land and labor productivity, and sustained innovations in the use of machines capable of converting mineral heat into work. Rather than insisting with Frank, Goldstone, Wong, and Pomeranz that the “great divergence” occurred only after about 1820–1850, because it was only then that fast and sustained growth rates in GDP per capita were discernible in England, I would agree with Joel Mokyr that the sources of these growth rates go back to the scientific culture and institutional changes of the Enlightenment.”

Duchesne (2006, p. 81)

“The operative principle in the rise of Europe is the generation of a continuing, self-sustaining process of cultural change.”

Duchesne (2006, p. 83)

“I like to summarize the change [the rise of the West] in one tell-tale event: the Portuguese penetration into the Indian Ocean led by Vasco da Gama in 1498. This was an extraordinary achievement. Some scholars will tell you that it was some kind of accident (...) Don't you believe it.”

Landes (2006, p. 3)

“The dynamic, unlike the Industrial Revolution in which it culminated, was not sudden, discontinuous, or qualitative. It was a long-drawn-out, cumulative, and perhaps some what unsteady process, but nevertheless a process rather than an event, lasting for six, seven, or even eight centuries.”

Mann (1986, p. 500)

“(The dynamic) was not due fundamentally to the twelfth-century town, or thirteenth- to fourteenth-century struggles between peasants and lords, or fourteenth-century capitalist accounting methods, or the fourteenth- to fifteenth-century Renaissance, or the fifteenth-century navigational revolution, or the scientific revolutions of the fifteenth to the seventeenth century, or sixteenth-century Protestantism, or seventeenth-century Puritanism, or seventeenth- to eighteenth-century English capitalist agriculture –the list could be continued. Each and everyone of these is weak as a general explanation of the European miracle, for one reason: They start too late in history.”

Mann (1986, pp. 500-501)

“The European dynamic was the accidental conjunction of two macropatterns (...) political blockage to the east and agricultural-cum-trading opportunity to the west. (...) In the medieval era, agricultural-cum-navigational opportunities were exploitable by a historically conjunctural, but internally patterned, set of overlapping power networks. These were (1) the normative pacification of Christendom, later largely replaced by a diplomatically regulated multistate civilization; (2) small, weak political states, growing in centralized-territorial coordinating and organic powers, but never internally or geopolitically hegemonic; and (3) a multiplicity of part-autonomous, competitive, local economic-power networks-peasant communities, lordly manors, towns, and merchant and artisan guilds –whose competition gradually settled in to that single, universal, diffuse set of private-property power relations we know as capitalism. By 1477 these power networks were developing into their simpler, modern form: a multistate, capitalist civilization (...). This conjunction of part-patterned processes and part-historical accidents is as close as we can come to an overall theory of European dynamism using historical forms of explanation.”

Mann (1986, p. 510)

“The 'miracle' of massive economic development occurred 'spontaneously' in Europe, and nowhere else.”

Mann (1988, p. 6)

“...the capitalist revolution in agriculture and industry of the eighteenth and nineteenth centuries was the single most important boost to human collective power in history.”

Mann (1986, p. 373)

“In seeking to explain European economic development from the nineteenth century onwards by considering it either as an aberration or as a turning point in history, the best way to start is by identifying the most general conditions of possibility of the phenomenon. These can be reduced to three: the definition of property rights, which guarantee to the various factors returns proportional to their contribution to the production of wealth; regulated markets that are as fluid as possible, in which transactions lead to the optimal allocation of resources; entrepreneurs who, on the look-out for any opportunity for profit, are constantly looking for new combinations of factors in order to replenish supply. These conditions of economic progress in turn rest upon (...) a political regime whose logic is democratic.”

Baechler (1988, p. 60)

### International competition for technological development

“The eighteenth century was the critical moment for both science and economic development. In that century literate Westerners embraced science as never before. First in Britain, then gradually throughout Western Europe, they learned it in schools and lecture halls; they picked up its contents from general textbooks; they read about scientists and their exploits in newspapers and journals; they came to believe in science and its power. Governments sent spies -generally to Britain- to find out the latest technological breakthroughs in manufacturing or mining. By the early nineteenth century ministers of state encouraged the teaching of science and mathematics in grammar and secondary schools for both boys and girls. An international competition for technological development had begun and continues to this day.”

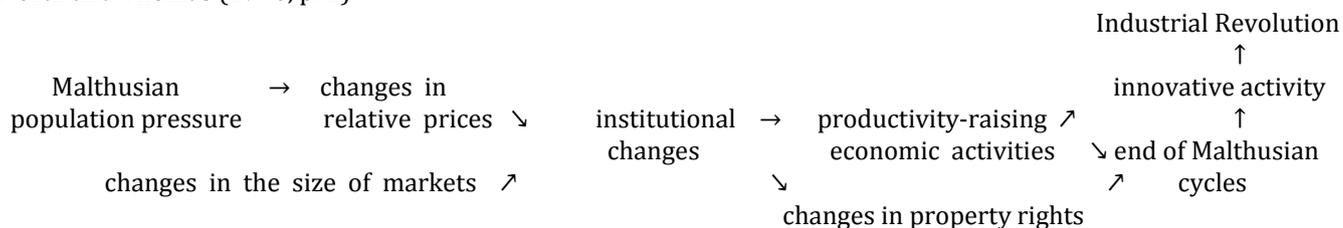
Jacob (1997, p. 6)

“... the key to the story is the variety of the options pursued and the increased likelihood (as compared to a single unified policy) that some would turn out to produce economic growth. (...) It was the dynamic consequences of the competition among fragmented political bodies that resulted in an especially creative environment.”

North (2005, p.138)

“In capsule form our explanation is that changes in relative product and factor prices, initially induced by Malthusian population pressure, and changes in the size of markets induced a set of fundamental institutional changes which channelled incentives towards productivity-raising types of economic activity. By the eighteenth century these institutional innovations and accompanying changes in property rights built productivity changes into the system enabling Western man to finally escape the Malthusian cycle. The so-called "Industrial Revolution" is simply a later surface manifestation of innovative activity reflecting this redirection of economic incentives.”

North and Thomas (1970, p. 1)



### References

Anievas, Alex; Kerem Nişancıoğlu (2015): *How the West Came to Rule: The Geopolitical Origins of Capitalism*, Pluto Press, London.

Baechler, Jean (1988): *The origins of modernity: Caste and feudality (Europe, India and Japan)*, in Jean Baechler, John A. Hall, and Michael Mann; eds.: *Europe and the rise of capitalism*, Blackwell, Oxford, UK, pp. 39-65.

Duchesne, Ricardo (2006): *Asia first?*, *The Journal of The Historical Society* 6(1), 69-91.

Duchesne, Ricardo (2011): *The uniqueness of Western civilization*, BRILL, Leiden, The Netherlands.

Frank, Andre Gunter (1998): *Re-ORIENT: Global economy in the Asian age*, University of California Press, Berkeley, CA.

George, Henry (1917): *The law of human progress (1st edition 1879)*, J. Fels, International Commission, New York.

Goldstone, Jack A. (2009): *Why Europe? The Rise of the West in world history, 1500-1850*, McGraw-Hill, New York.

Grantham, George (1999): "On the macroeconomics of pre-industrial economies", *European Review of Economic History* 3(2), 199-232.

Jacob, Margaret C. (1997): *Scientific culture and the making of the industrial West*, Oxford University Press, New York.

Landes, David S. (2006): "Why Europe and the West? Why not China?", *Journal of Economic Perspectives* 20(2), 3-22.

Mann, Michael (1986): *The sources of social power, Volume I: A history of power from the beginning to AD 1760*, Cambridge University Press, Cambridge, UK.

Mann, Michael (1988): "European development: Approaching a historical explanation", in Jean Baechler, John A. Hall, and Michael Mann; eds.: *Europe and the rise of capitalism*, Blackwell, Oxford, UK, pp. 6-19

Marx, Karl, Friedrich Engels (1848): *The communist manifesto*.

- Mielants, Eric H. (2007): *The Origins of Capitalism and the "Rise of the West"*, Temple University Press, Philadelphia.
- Morris, Ian (2010): *Why the West rules —for Now. The Patterns of History and What They Reveal about the Future*, Profile Books, London.
- North, Douglass Cecil (2005): *Understanding the Process of Economic Change*, Princeton University Press, Princeton, New Jersey.
- North, Douglass Cecil; Robert Paul Thomas (1970): "An Economic Theory of the Growth of the Western World", *The Economic History Review* 23(1), 1-17.
- Pomeranz, Kenneth (2000): *The Great Divergence: China, Europe, and the Making of the Modern World Economy*, Princeton University Press, Princeton, New Jersey.
- Popov, Vladimir (2015): *Mixed Fortunes: An Economic History of China, Russia, and the West*, Oxford University Press, Oxford, UK.
- Rosenberg, Nathan; L. E. Birdzell, Jr. (1986): *How the West Grew Rich: The Economic Transformation of the Industrial World*, Basic Books, New York.
- Rosenthal, Jean-Laurent; R. Bin Wong (2011): *Before and beyond divergence: The politics of economic change in China and Europe*, Harvard University Press, Cambridge, Massachusetts.
- Scott, Bruce R. (2011): *Capitalism. Its Origins and Evolution as a System of Governance*, Springer, New York.
- Studer, Roman (2009): *Does Trade Explain Europe's Rise? Geography, Market Size And Economic Development*, Working Papers No. 129/09, London School of Economics.
- Vries, Peer (2013): *Escaping poverty: The origins of modern economic growth*, V&R unipress, Vienna University Press, Goettingen, Germany.
- Žmolek, Michael Andrew (2013): *Rethinking the Industrial Revolution. Five Centuries of Transition from Agrarian to Industrial Capitalism in England*, BRILL, Leiden, The Netherlands.

## Eurocentric arguments for the rise of the West

“ The checklist of arguments will be presented as a numbered series of propositions, and, for each, the historians who put forward that argument will be named (...)

1. People of the white race have an inherited superiority over the people of other races. (Weber argued this way; but none of the seven contemporary historians expresses racist views.)
2. The climate of Europe, or northwest Europe, is uniquely favorable for agriculture. (Jones, Mann, Hall, Landes) Or: Europe, along with China, possesses a climate that is more favorable for agriculture than are the climates of all other regions, especially the humid tropics. (Diamond)
3. The climate of Europe is better for human comfort and productivity than are the climates of all other regions. (Jones, Landes)
4. The soils of Europe are uniquely fertile. (Jones, Mann, Hall, Landes)
5. The landform structure of Europe is uniquely favorable for communication and the diffusion of ideas. (Jones, Diamond, Landes)
6. The landforms of Europe differentiate the continent into separate ecological cores, and this explains in large part the fact that Europe has many moderate-sized states instead of an empire. (Jones, Hall, Diamond, Landes)
7. The indented coastline of Europe partly explains the linguistic, ethnic, and political differentiation of Europe. (Jones, Mann, Diamond)
8. The forest vegetation of Europe historically contributed to the development of individualistic people and small families, hence led Europe toward private property and capitalism (Weber, Mann, Hall, Landes) and helped Europe uniquely to avoid overpopulation and [ian disasters. (Mann, Hall, Landes)
9. Europe's environment is less subject to natural disasters than are other regions, and this encouraged development. (Jones, Hall)
10. Europe was, historically, less disease-ridden than all other places. (Jones, Diamond, Landes)
11. Europeans, historically, were better nourished than other people. (White, Jones, Landes)
12. Europeans were uniquely inventive. (Weber, White, Brenner, Jones, Mann, Hall, Landes)
13. Europeans were uniquely rational in the practice of sexual self-restraint and so avoided overpopulation and Malthusian disasters. (Jones, Hall, Landes)
14. Europeans were uniquely innovative and progressive. (Weber, White, Brenner, Jones, Mann, Hall, Diamond, Landes)
15. Europeans were uniquely capable of creative and scientific thought. (Weber, White, Mann, Hall, Landes)
16. Europeans held uniquely democratic, ethical values. (Weber, White, Mann, Hall, Landes)
17. The development of classes and/or class struggle was most fully developed in Europe. (Weber, Brenner, Mann, Hall, Landes)
18. The Christian religion, as doctrine, led to unique European development. (Weber, White, Mann, Hall)
19. The Christian Church, as institution, led to unique European development. (Weber, White, Mann, Hall, Landes)
20. The European family was uniquely suited to development. (Also see No. 8.) (Jones, Mann, Hall, Landes)
21. Europeans uniquely, in ancient and/or medieval times, developed the concept and institution of private property. (Weber, White, Brenner, Jones, Mann, Hall, Diamond, Landes)
22. Europeans uniquely, in ancient and/or medieval times, developed the institution of the market. (Jones, Hall, Diamond, Landes)
23. Urbanization, in Europe, was more favorable for development than elsewhere; European cities were more progressive and/or more free than cities elsewhere. (Weber, Jones, Hall, Diamond, Landes)
24. The state, in Europe, developed toward modern politics more rapidly than elsewhere. (Also see Nos. 25, and 26) (Weber, Jones, Mann, Hall, Diamond, Landes)
25. The empire as a political form hobbled development in non-European regions. (Weber, Jones, Mann, Hall, Diamond, Landes)
26. Oriental despotism hobbled social and technological development in non-European regions. (Also see No. 25) (Weber, Jones, Mann, Hall, Diamond, Landes)
27. Europe was uniquely capable of avoiding Malthusian disasters for many reasons. (Also see Nos. 8 and 13) (Brenner, Jones, Mann, Hall, Landes)
28. The practice of, and dependence on, irrigation slowed or stopped development in hydraulic or irrigating societies. (Also see No. 26) (Weber, Jones, Mann, Hall, Landes)
29. The development of feudalism in Europe uniquely favored the rise of democracy and private property. (Also see No. 21) (Weber, Jones, Mann, Landes)
30. Europeans were uniquely venturesome, uniquely given to exploration and overseas expansion. (Jones, Mann, Landes)”

“... the favorite argument is the superiority of Europe's environment for agriculture. Landes, Diamond, and Jones are particularly prone to use the arguments of environmental determinism. The Malthusian arguments are also among the favorites. But the overwhelmingly important arguments are Weberian, invoking claims about the superiority of the European mind: its rationality, inventiveness, innovativeness, venturesomeness, and so on. Max Weber is still the godfather of Eurocentric historiography.”

“... in nearly all non-Western civilizations, past and present, the principal feature has been, and remains, that they are cultures designed for, and limited in their usefulness to, ruling elites. By-and-large a powerful few chart the course and enjoy the benefits of culture and civilization, and nearly always at the expense of the weak and passive many. In these cultures knowledge, that essential stock of a civilization’s ideas about itself and the world, has been controlled by, and restricted to, an aristocratic cadre who view it as a way to promote themselves and dominate others. Often their goal has been to preserve the people’s ignorance and subordination by the superstitions of noble character and superiority of inherited virtue of the rulers.”

Kelley (1999, p. 9)

“Cultures like these are, and always have been, stagnant and moribund, neither developing nor progressing in any beneficial way for the people as a whole. The elites who dominate them have a strong interest in maintaining the status quo.”

Kelley (1999, p. 10)

“Compared to these non-Western cultural traits, Western civilization came eventually to embody the belief that no men are innately superior to others. This, in no small measure, is attributable to the influence of Christianity which saw in man a miniature reflection of his Maker.”

Kelley (1999, p. 10)

“... only in the West did the notion of history, as the record of a civilization’s advance or regression, self-consciously shape the way a people viewed itself and its accomplishments. Western man, for the most part, has not thought of his culture as a finished product, but as an on-going enterprise in which present achievements, although built on the accumulated deeds of past generations, furnish but the opportunities for greater benefits for tomorrow. Western culture was no static ideal, but a dynamic and growing vision for future generations. In this sense, Western culture is still an ideal to be achieved, still in process of formation.”

Kelley (1999, p. 11)

## **References**

Blaut, James M. (2000): Eight eurocentric historians

Kelley, Michael W. (1999): The impulse of power in Western civilization

## Obstacles to modern economic growth

“Why, with only a few exceptions—Japan, South Korea, Chile, Singapore, Taiwan—have countries outside of Europe, North America, and Australia/New Zealand found it so hard to achieve European standards of living? The primary reasons why modern economic growth has not spread to more nations are lack of scientific training, lack of entrepreneurial opportunity, or both. (...) First, a dependence on selling natural resources can trap countries into low levels of development. (...) A second obstacle to modern economic growth is investment in the wrong kinds of education. Many countries that observed the success of the West did not appreciate how much that success depended on broad education, free thought, the technical training of craftspeople, and the production of scientifically skilled engineers. Instead, they thought that college education of any kind would do (...) A third obstacle to modern economic growth is a lack of opportunities for people with training, ideas, and talent to create new industries (...) A fourth path to poverty is creating closed economies. (...) Finally, one more path to poverty, much rarer in the world today but fairly common in most of history, was for religious orthodoxy to stifle innovation or for religious education to dominate and displace scientific and technical education.”

Goldstone (2009, pp. 172-175)

### The doctrine of exhausted opportunity

“According to this doctrine profitable economic opportunities will not long go unexploited unless agents are prevented from responding to them by social or institutional obstacles. Since such obstacles tend in the long run to be eroded by the self-interested actions of those who would profit from the unexploited opportunity, it follows that economies characterised by a stagnant technology are likely to have exhausted their opportunities for further growth.”

Grantham (1999, p. 204)

### Small vs large markets

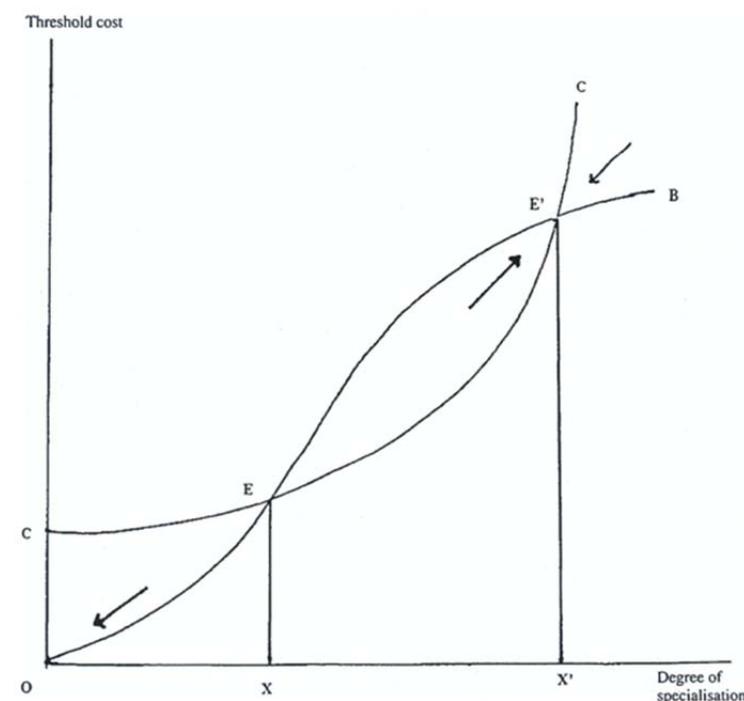
“Economists since Adam Smith have understood in a general way that economic development involves a circular chain of causation between the extent of the market and the division of labour. The market supply of each specialised producer constitutes the effective demand for the marketed supplies of other specialised producers. It follows that the greater the degree of specialisation, the larger the effective demand for specialised production. In the theoretical literature this phenomenon is called 'thick-market externalities (...). The externalities stem from the capacity of large markets to generate a level of aggregate demand that is high enough to cover the sunk costs of providing specialised services.

Grantham (1999, p. 217)

“... the structure of the pre-industrial economy from the perspective of its fundamental indivisibilities. The main sunk cost in a handicraft economy is the irreversible investment in acquiring the skills that make specialised workers more productive than unspecialised ones. In an agricultural economy the cost is the advances of labour and capital required by more intensive cultivation. Neither were trivial, and they were augmented by the costs of collecting, transporting and financing non-local sales whenever the level of specialisation reached the point where it could only be sustained by geographical extension of the market.”

Grantham (1999, p. 217)

Grantham (1999, p. 220)



“The horizontal axis measures the extent of specialisation, which can be measured in terms of the number of specialists or in units of specialised output, while the vertical axis measures the threshold or cut-off cost of opportunities to specialise. The curve CC orders such opportunities by their minimum cost, and maps them onto the aggregate level of specialisation that would obtain if all opportunities up to the one governed by a given level of specialisation were accepted. The curve starts from a positive point on the cost axis because even the least expensive project incurs positive cost, and it is concave upward because one can always conceive of ever more costly projects. The curve OB by contrast defines the steady-state level of specialisation that supports a given threshold cost. It maps steady-state demand or cost of finding a trading partner onto the threshold cost of the marginal production opportunity. Clearly low levels of specialisation imply low cut-off thresholds, because they mean low numbers of market participants and high marketing cost. Conversely, high levels of specialisation imply a high threshold. This relation

exhibits increasing, followed by decreasing, returns to increasing specialisation, reflecting the initially sharp decline in search costs as the number of market participants increases followed by lower rates of gain to additional participants when the market is large.”

Grantham (1999, pp. 220-221)

### **Reference**

Goldstone, Jack A. (2009): *Why Europe? The Rise of the West in world history, 1500-1850*, McGraw-Hill, New York.

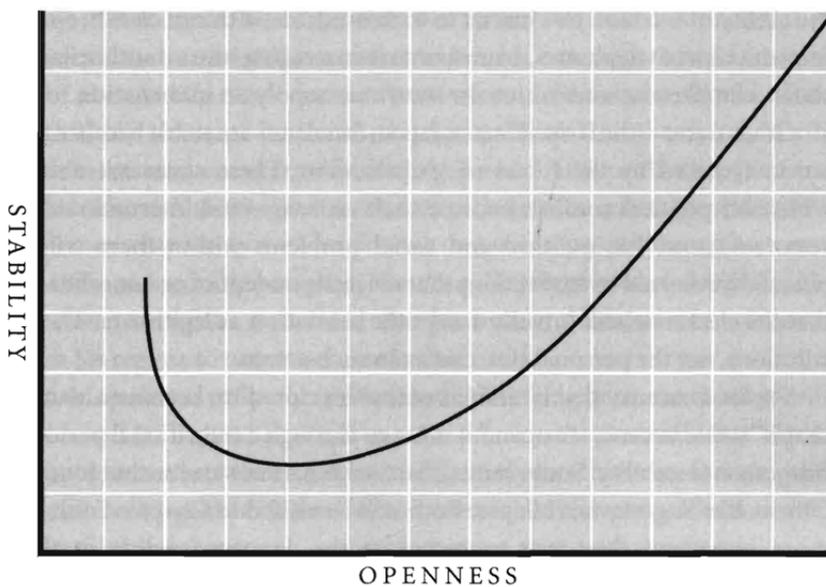
Grantham, George (1999): “On the macroeconomics of pre-industrial economies”, *European Review of Economic History* 3(2), 199-232.

## The J-curve

“There is a counterintuitive relationship between a nation's stability and its openness, both to the influences of the outside world and within its borders. Certain states—North Korea, Burma, Belarus, Zimbabwe—are stable precisely because they are closed (...) Other states—the United States, Japan, Sweden—are stable because they are invigorated by the forces of globalization. These states are able to withstand political conflict, because their citizens—and international investors—know that political and social problems within them will be peacefully resolved by institutions that are independent of one another and that the electorate will broadly accept the resolution as legitimate. The institutions, not the personalities, matter in such a state. Yet, for a country that is ‘stable because it's closed’ to become a country that is ‘stable because it's open,’ it must go through a transitional period of dangerous instability. Some states, like South Africa, survive that journey. Others, like Yugoslavia, collapse.”

Bremmer (2006, pp. 4-5)

“ ‘Openness’ is a measure of the extent to which a nation is in harmony with the crosscurrents of globalization—the processes by which people, ideas, information, goods, and services cross international borders at unprecedented speed. How many books written in a foreign language are translated into the local language? What percentage of a nation's citizens have access to media outlets whose signals originate from beyond their borders? How many are able to make an international phone call? How much direct contact do local people have with foreigners? How free are a nation's citizens to travel abroad? How much foreign direct investment is there in the country? How much local money is invested outside the country? How much cross-border trade exists? (...) But openness also refers to the flow of information and ideas within a country's borders. Are citizens free to communicate with one another? Do they have access to information about events in other regions of the country? Are freedoms of speech and assembly legally established? How transparent are the processes of local and national government? Are there free flows of trade across regions within the state? Do citizens have access to, and influence in, the processes of governance? ‘Stability’ has two crucial components: the state's capacity to withstand shocks and its ability to avoid producing them. A nation is only unstable if both are absent.”



Bremmer (2006, pp. 7-8)

Bremmer (2006, p. 6)

“... the left side of the curve is much steeper because a little consolidation and control can provide a lot of stability. It is faster and easier to close a country than to open it.”

Bremmer (2006, p. 14)

“Nations with little history of openness and pluralism have a habit of responding to turmoil with a centralization of state power; that habit is a hard one to break. (...) Most developing countries have no experience of stable normalcy to return to. Throwing money at social and political problems in order to finance the construction of new infrastructure ignores the problem revealed by the J curve: developing countries become less stable before they become more so. It's one thing to build a new parliament building. It's quite another to populate the building with legislators dedicated to pluralist governance. The latter takes time, and before it can be achieved, the process of building an open state requires a period of significant instability.”

Bremmer (2006, p. 15)

“The left slope of the J curve is much steeper than the right side because a country that is stable only because it's closed to the outside world can fall into a deep crisis very quickly (...) the reverse is also true: a closed country can substantially reinforce its stability—and become even more authoritarian— through the implementation of measures that further isolate the nation's people.”

Bremmer (2006, p. 17)

“In any left-side-of-the-curve state, it's easier to close a country than to open it. But once mature political institutions are fully constructed and embraced by a nation's people, they are a lot more durable and do far more to protect the viability of the state than any police state tactic can.”

Bremmer (2006, p. 18)

“The far left side is the most counterintuitive section of the J curve: states that are often among the most destitute and retrograde are surprisingly stable.”

Bremmer (2006, p. 27)

“All states are in constant motion on the J curve. In left-side-of-the-curve states, there is a constant tension between the natural pull toward greater openness and an authoritarian state's efforts to continually reconsolidate power (...) In addition, the J curve itself is in motion up and down. When, for example, a natural disaster strikes, a nation's entire J curve may slip lower. Such a shift indicates that, for every possible degree of openness, there is less stability. The curve can also shift higher. If a state's economy depends on oil revenues, and the global price for oil moves higher, the added revenue increases stability at every possible level of openness.”

Bremmer (2006, p. 20)

“Consolidated authoritarian regimes shouldn't be bolstered, but that doesn't imply that the correct policy is ‘regime change’—certainly not in the military, statue-toppling sense. The right approach to closed states is usually inducement and containment. Societies can be persuaded to accept policies that open the country incrementally to the outside world and build a dynamic and financially independent middle class capable of changing society from within. That's why the United States is right to help promote Chinese and Russian membership in the World Trade Organization.”

Bremmer (2006, p. 23)

“... the developed world should neither shelter nor militarily destabilize authoritarian regimes—unless those regimes represent an imminent threat to the national security of other states. Developed states should instead work to create the conditions most favorable for a closed regime's safe passage through the least stable segment of the J curve—however and whenever the slide to instability comes. And developed states should minimize the risk these states pose the rest of the world as their transition toward modernity begins.”

Bremmer (2006, pp. 23-24)

“It's fine to say that a nation more politically, economically, and socially open to foreign markets and ideas will be freer, more prosperous, and, in the long run, more stable than a closed nation. Yes, open is better than closed. But, if pressure for change is not released incrementally and with care—for instance, if free and fair national elections were held tomorrow in Pakistan, Egypt, or Uzbekistan—much of the rest of the world would not like the result.”

Bremmer (2006, p. 80)

“Unfortunately, the rulers of most closed states have little incentive to begin preparing their societies for mature governance in the first place. Arab regimes, in particular, have made it difficult to establish a viable political alternative to the ruling elite. (...) Those who believe, for example, that only the threat (or the reality) of military action can create pressure for reform are dangerously shortsighted. But those who believe that committed diplomats can always find the right combination of incentives to modify any tyrant's behavior are mistaken as well.”

Bremmer (2006, pp. 81-82)

“All states are in constant movement on the J curve (...) Left alone, a left-side state will slide toward instability because authoritarianism must be continuously reconsolidated (...) As the energies of globalization open up the least politically and economically developed areas of the world, as the citizens of closed states learn more about life beyond their borders and discover they don't have to live as they do, tyrants must expend more and more effort to isolate their societies. These states can now fall more swiftly and suddenly into instability than at any time in history.”

Bremmer (2006, p. 265)

“The countries on the right side of the J curve have a collective political, economic, and security interest in working together to help move left-side states through instability to the right side of the curve. But they must recognize that the most powerful agents for constructive, sustainable change in any society are the people who live within it. Strategies that empower groups within closed states to challenge the authoritarian status quo can create strong momentum for democratic change.”

Bremmer (2006, p. 266)

“Yet, globalization, for all the reasons listed above, can also be tremendously destabilizing. Not all states on the left side of the J curve are equipped to survive the potential chaos of the transition from left to right. There is pressure for change within every closed society, a pressure that exists naturally. But, in the short term, demands for far-reaching political change should be fully supported only in those states that have a fighting chance of surviving the passage through the depths of the curve. If a country that is unprepared for such instability falls, or is pushed, into the dip in the curve, there are two possible outcomes. Both are geopolitically dangerous. First, when a state suddenly becomes unstable, its citizens may demand a restoration of stability at the expense of all meaningful reform.”

Bremmer (2006, p. 267)

“The other possible consequence of a premature slide into instability is even more dangerous—total state failure.”  
Bremmer (2006, p. 268)

“How can right-side countries help prepare a left-side state for the destabilizing transition? By implementing policies designed to raise the left-side state's entire J curve. When a country becomes more stable at every possible level of openness, that country is better fortified to withstand the stresses of change. That's why, for example, the United States government acted wisely in rising above partisanship to renew most-favored-nation trading status for China during the 1990s.”

Bremmer (2006, p. 270)

“When, on the other hand, a closed regime attempts ambitious economic and political reforms simultaneously, the resulting shocks to the system can be too great. Mikhail Gorbachev (and later Boris Yeltsin) learned that lesson the hard way. When a left-side state tries to reform its politics under conditions of high unemployment and without the support of an economically sturdy middle class, the resentments unleashed produce a dangerous backlash. There is a direct relationship between instability and demand within society for authoritarianism. A people who fear economic insecurity will defer calls for freedom and representative government in favor of support for (or at least submission to) a single clear voice promising food, jobs, and social guarantees. The purpose, therefore, of lifting the entire J curve through economic reform and the creation of a broad middle class is to reduce demand for authoritarianism and to build the necessary public confidence that increases demand for an opening up of society.”

Bremmer (2006, p. 271)

### **Reference**

Bremmer, Ian (2006): *The J curve: A new way to understand why nations rise and fall*, Simon & Schuster, New York.

## The basic laws of human stupidity

“The **First Basic Law of Human Stupidity** asserts without ambiguity that ‘Always and inevitably everyone underestimates the number of stupid individuals in circulation’.”  
Cipolla (2011, p. 19)

“I firmly believe that stupidity is an indiscriminate privilege of all human groups and is uniformly distributed according to a constant proportion. This fact is scientifically expressed by the **Second Basic Law** which states that ‘The probability that a certain person be stupid is independent of any other characteristic of that person’.”  
Cipolla (2011, p. 24)

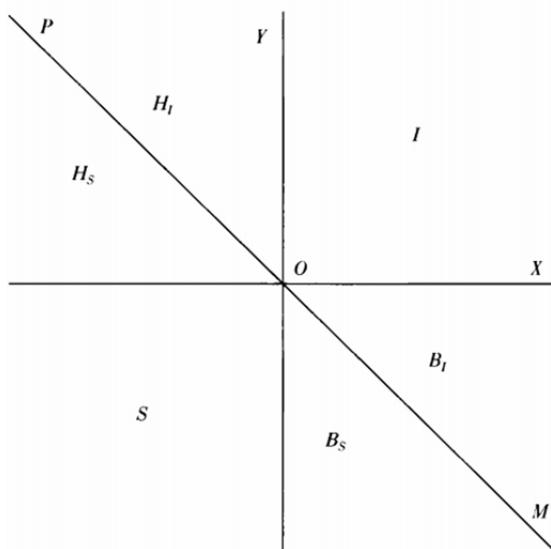
“The **Third Basic Law** assumes (...) that human beings fall into four basic categories: the helpless, the intelligent, the bandit and the stupid. If Tom takes an action and suffers a loss while producing a gain to Dick, (...) Tom acted helplessly. If Tom takes an action by which he makes a gain while yielding a gain also to Dick, (...) Tom acted intelligently. If Tom takes an action by which he makes a gain causing Dick a loss, (...) Tom acted as a bandit. (...) As the Third Basic Law explicitly clarifies:

‘A stupid person is a person who causes losses to another person or to a group of persons while himself deriving no gain and even possibly incurring losses’.”  
Cipolla (2011, pp. 35-36)

“Essentially stupid people are dangerous and damaging because reasonable people find it difficult to imagine and understand unreasonable behaviour. A stupid creature will harass you for no reason, for no advantage, without any plan or scheme and at the most improbable times and places. You have no rational way of telling if and when and how and why the stupid creature attacks. When confronted with a stupid individual you are completely at his mercy. Because the stupid person’s actions do not conform to the rules of rationality, it follows that: a) one is generally caught by surprise by the attack; b) even when one becomes aware of the attack, one cannot organize a rational defence, because the attack itself lacks any rational structure.”  
Cipolla (2011, pp. 51-52)

“One may hope to outmanoeuvre the stupid and up to a point one may actually do so. But because of the erratic behaviour of the stupid, one cannot foresee all the stupid’s actions and reactions and before long one will be pulverized by the unpredictable moves of the stupid partner. This is clearly summarized in the **Fourth Basic Law** which states that: ‘Non-stupid people always underestimate the damaging power of stupid individuals. In particular non-stupid people constantly forget that at all times and places and under any circumstances to deal and/or associate with stupid people infallibly turns out to be a costly mistake’.  
Through centuries and millennia, in public as in private life, countless individuals have failed to take account of the Fourth Basic Law and the failure has caused mankind incalculable losses.”  
Cipolla (2011, p. 56)

“The **Fifth Basic Law** states that ‘A stupid person is the most dangerous type of person’.  
The corollary of the Law is that ‘A stupid person is more dangerous than a bandit’.”  
Cipolla (2011, p. 59)



“Stupid people cause losses to other people with no counterpart of gains on their own account. Thus the society as a whole is impoverished.”  
Cipolla (2011, p. 60)

“the helpless with overtones of intelligence (area  $H_I$ ), the bandits with overtones of intelligence (area  $B_I$ ) and above all the intelligent (area I) all contribute, though in different degrees, to accrue to the welfare of a society. On the other hand the bandits with overtones of stupidity (area  $B_S$ ) and the helpless with overtones of stupidity (area  $H_S$ ) manage to add losses to those caused by stupid people thus enhancing the nefarious destructive power of the latter group.”  
Cipolla (2011, pp. 61-62)

“It would be a profound mistake to believe the number of stupid people in a declining society is greater than in a developing society. Both such societies are plagued by the same percentage of stupid people. The difference between the two societies is that in the society

which performs poorly: a) the stupid members of the society are allowed by the other members to become more active and take more actions; b) there is a change in the composition of the non-stupid section with a relative decline of populations of areas  $I$ ,  $H_I$  and  $B_I$  and a proportionate increase of populations of area  $H_S$  and  $B_S$ .”  
Cipolla (2011, p. 62)

### **Reference**

Cipolla, Carlo M. (2011): The basic laws of human stupidity, il Mulino, Bologna, Italy.

## Exit, voice and loyalty

### Social life is not error-free

“Under any economic, social, or political system, individuals, business firms, and organizations in general are subject to lapses from efficient, rational, law-abiding, virtuous, or otherwise functional behavior. No matter how well a society's basic institutions are devised, failures of some actors to live up to the behavior which is expected of them are bound to occur, if only for all kinds of accidental reasons. Each society learns to live with a certain amount of such dysfunctional or misbehavior.”

Hirschman (1970, p. 1)

### How to deal with lapses and mistakes of economic actors

The performance of a firm or an organization is assumed to be subject to deterioration (...) Management then finds out about its failings via two alternative routes:

(1) Some customers stop buying the firm's products or some members leave the organization: this is the exit option. As a result, revenues drop, membership declines, and management is impelled to search for ways and means to correct whatever faults have led to exit.

(2) The firm's customers or the organization's members express their dissatisfaction directly to management or to some other authority to which management is subordinate or through general protest addressed to anyone who cares to listen: this is the voice option. As a result, management once again engages in a search for the causes and possible cures of customers' and members' dissatisfaction.”

Hirschman (1970, pp. 3-4)

“Exit belongs to the [economics] realm, voice to the [politics realm]. The customer who, dissatisfied with the product of one firm, shifts to that of another, uses the market to defend his welfare or to improve his position; and he also sets in motion market forces which may induce recovery on the part of the firm that has declined in comparative performance. This is the sort of mechanism economics thrives on. It is neat : one either exits or one does not; it is impersonal: any face-to-face confrontation between customer and firm with its imponderable and unpredictable elements is avoided and success and failure of the organization are communicated to it by a set of statistics; and it is indirect —any recovery on the part of the declining firm comes by courtesy of the Invisible Hand, as an unintended by-product of the customer's decision to shift. In all these respects, voice is just the opposite of exit. It is a far more ‘messy’ concept because it can be graduated, all the way from faint grumbling to violent protest; it implies articulation of one's critical opinions rather than a private, ‘secret’ vote in the anonymity of a supermarket; and finally, it is direct and straightforward rather than roundabout. Voice is political action par excellence.”

Hirschman (1970, pp. 15-16)

“Every state—and indeed every organization—requires for its establishment and existence some limitations or ceilings on the extent of exit or of voice or of both. In other words, there are levels of exit (disintegration) and voice (disruption) beyond which it is impossible for an organization to exist as an organization. At the same time, an organization needs minimal or floor levels of exit and voice in order to receive the necessary feedback about its performance. Every organization thus navigates between the Scylla of disintegration-disruption and the Charybdis of deterioration due to lack of feedback. A territorial organization such as a national state must by its very nature suppress exit in the form of secession (though not necessarily the emigration of individual citizens); hence, feedback is here bound to take primarily the form of voice (...) in the center of Europe the attempt to suppress territorial exit—and to assert the right to control the movement of men and commodities across borders—required so great a concentration of effort and authority that the attempt to achieve manageably low levels of exit led also to the crushing of voice, which was reduced in the process to levels far below those required for long-run stability and health. The countries of the European periphery (and a few others) found it easier to control their borders and therefore ‘managed to keep a better balance between exit controls and voice channeling during the crucial phases of state-building’.”

Hirschman (1980, p. 441)

“... just as the process of state-building required restricting both exit and voice, so liberalization and widening of participation may not be possible, or may be extraordinarily difficult to handle, unless exit and voice controls can be eased jointly. The reason is simple: the forces of criticism and dissent that have been dammed up by stringent voice and exit controls may be so powerful, especially during a period of economic transformation, that, if they are released into one channel (usually voice) only, they will exceed tolerable levels or, at any rate, such levels as are thought to be tolerable by the rulers.”

Hirschman (1980, p. 442)

The interaction of these three variables—suppression of exit, suppression of voice, and repression—can also be observed in other settings. One might even propose a theorem: a state can control only two out of these three variables. In Cuba, Fidel Castro chose to suppress voice and to limit the amount of repression: so he had to put up with an unexpectedly large loss of skilled manpower as hundreds of thousands of Cubans chose to emigrate. In Stalin's Russia, complete suppression of exit and voice yielded repression of a size and kind that surely had not been fully intended at the outset, while in post-

Stalinist Russia, the decision to set limits to repression, combined with the continued strict controls on exit, has led to the voicing of considerably more dissent than the authorities had planned for.”

Hirschman (1980, p. 444)

### **References**

Hirschman, Albert O. (1970): *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States*, Harvard University Press, Harvard, Massachusetts.

Hirschman, Albert O. (1980): 'Exit, voice, and loyalty': further reflections and a survey of recent contributions, *The Milbank Memorial Fund Quarterly. Health and Society* 58(3), 430-453.

## Big businesses and the wealth of nations

“Ever since the Second Industrial Revolution exploded in the last decades of the nineteenth century, the large industrial enterprise has continuously played a central role in the dynamic growth of the international economy and the economic transformation of all major nations. Among the new forms of large enterprises, manufacturing firms have been at the forefront not only of capital formation and productivity growth but also of technological progress and knowledge augmentation. This is not simply because modern economic growth on a global scale has taken the general form of industrial development. It is also because manufacturing enterprises, especially those in capital-intensive and knowledge-intensive industries, have historically accounted for most of the research and development which became essential to continuing technological innovation in the twentieth century.”

Chandler et al (1997, p. 24)

“From their beginnings in the late nineteenth century large enterprises in capital-intensive industries have systematically embodied the latest scientific and technological advances and have commercialized these into marketable products. In industries which led the Second Industrial Revolution, “first movers” —often start-up firms which invested in manufacturing facilities large enough to exploit economies of scale— established themselves as dominant oligopolistic players in domestic and then international markets. (...) Large industrial enterprises thus established themselves as the fertile learning ground for technological, managerial, and organizational knowledge for an entire economy. The new technologies they developed in manufacturing were extensively adopted in nonmanufacturing sectors. This contributed to productivity improvement in a wide range of industries, especially transportation, communication, and financial services. Large industrial enterprises accelerated this diffusion process by internalizing the technology-transfer mechanism through their integration and diversification into nonmanufacturing functions.

(...) The modern industrial enterprise, therefore, has not been simply scale-intensive, capital-using, and natural-resource-consuming. It has also been knowledge-augmenting and learning-enhancing. By committing to the extensive long-term investment in human and organizational resources as well as physical assets, these large enterprises could exploit the complementarity between the large-scale investment in physical capital and the sustained capital formation in such intangible assets as human resources and technological knowledge. The capabilities which resulted became the core competencies of many of the international firms. These competencies enabled such firms to maintain themselves as major global players and to exploit the dramatic technological innovations in electronics, aerospace, chemicals, and pharmaceuticals associated with what might be considered a Third Industrial Revolution after World War II. The new technologies of the Third Industrial Revolution transformed the processes of production and distribution as effectively as the new capital-intensive technologies of the Second Industrial Revolution altered them in the late nineteenth century. But now the prime commercializers were large firms already in existence, whereas in the Second Industrial Revolution the lead had usually been taken by new firms.”

Chandler et al (1997, pp. 24-25)

“The major contributions of the world's large industrial enterprises to economic growth during the twentieth century appear to be four. (...)

First, large firms substantially lowered the cost of production by investing in manufacturing facilities large enough to exploit economies of scale. This was historically a necessary condition for those firms to become oligopolistic players in capital-intensive industries. (...)

Second, by recruiting the managers, workers, and technicians -the human capital- required to use and commercialize the new technologies, these enterprises became the locus of learning for the initial development and continued enhancement of their product-specific intangible organizational assets. And these assets were essential to maintain the industrial and competitive strength of the national industries in which they operated.

Third, the managers of the new industrial enterprises quickly realized that, if they were to maintain the cost advantages of large-scale production, they had to have an assured flow of materials and information and direct contacts with distributors in national and global markets. Thus, these firms became the core, the nexus, of a network of suppliers, equipment makers, retailers, advertisers, designers, and providers of technical and financial services.

Fourth, based on the human capital they cultivated, large industrial enterprises became a primary driver of technological advances through their heavy investment in research and development activities. This investment has become increasingly critical for the commercialization of new technology, particularly in capital-intensive and increasingly knowledgeintensive industries, in order to secure and raise market share in a domestic market, to expand into international markets, and to create barriers to entry for newcomers.”

Chandler et al (1997, p. 26)

### Reference

Chandler, Alfred D.; Franco Amatori; Takashi Hikino; eds. (1997): Big Business and the Wealth of Nations, Cambridge University Press, New York.

## The five tenets of injustice

“The five tenets of injustice are that: elitism is efficient, exclusion is necessary, prejudice is natural, greed is good and despair is inevitable. (...) Those who believe in these tenets are the majority in power across almost all rich countries. Although many of those who are powerful may want to make the conditions of life a little less painful for others, they do not believe that there is a cure for modern social ills, or even that a few inequalities can be much alleviated. Rather, they believe that just a few children are sufficiently able to be fully educated and only a few of those are then able to govern; the rest must be led. They believe that the poor will always be with us no matter how rich we are. They have also come to believe that most others are naturally perhaps genetically, inferior to them. (...) This book brings together evidence which shows that these beliefs are unfounded. The evidence also shows how people who end up in power come so easily to hold these beliefs, or become converted to them, and how their beliefs provide false justification for those who benefit most from injustice.”

Dorling (2010, pp. 1-2)

“Elitism and exclusion have further causes and corollaries, and chief among these is prejudice. As elitism and inequality rise, and as more people become socially excluded, or are able to exclude themselves by using their wealth, those at the top more often look down on others with ever greater disdain and fear, as evidenced by growing social segregation (...) The rise of elitism, exclusion and prejudice were all precursors of the age of greed, ushered in during the 1980s, seen as good, and not questioned seriously until 2008.”

Dorling (2010, p. 7)

“Social inequality within rich countries persists because of a continued belief in the tenets of injustice.”

Dorling (2010, p. 13)

“The new injustices in affluent countries have several things in common: all are aspects of rising social inequalities; all have arisen from a surplus of riches; and all suggest that so far we have come up with the wrong answer to the question of what we should do now that we are so rich.”

Dorling (2010, p. 14)

“Elitism suggests that educational divisions are natural. Educational divisions are reflected both in those children who are excluded from life choices for being seen as not having enough qualifications, and in those able to exclude themselves, often by opting into private education. Elitism is the incubation chamber within which prejudice is fostered. Elitism provides a defence for greed. It increases anxiety and despair as endless examinations are taken, as people are ranked, ordered and sorted. It perpetuates an enforced and inefficient hierarchy in our societies.”

Dorling (2010, p. 309)

“Just as elitism is integral to all the other forms of injustice, so is exclusion. The exclusion that rises with elitism makes the poor appear different, exacerbates inequalities between ethnic groups and, literally, causes racial differences. Rising greed could not be satisfied without the exclusion of so many, and so many would not be excluded now were it not for greed. But the consequences spread up through even to those who appear most successfully greedy. Rates of despair might be highest for those who are most excluded but even the wealthy in rich countries are now showing many more signs of despair, as are their children. Growing despair has become symptomatic of our more unequal affluent societies as a whole. The prejudice that rises with exclusion allows the greedy to try to justify their greed and makes others think they deserve a little more than most. (...) And as elitism incubates exclusion, exclusion exacerbates prejudice, prejudice fosters greed and greed –because wealth is simultaneously no ultimate reward and makes many without wealth feel more worthless – causes despair. In turn, despair prevents us from effectively tackling injustice.”

Dorling (2010, pp. 309-310)

## Reference

Dorling, Daniel (2010): *Injustice: Why Social Inequality Persists*, The Policy Press, Bristol, UK.

## Why Europe grew rich and Asia did not

“Since the nineteenth century a number of explanations have been offered for why Europe industrialized and Asia did not. Advantages in markets, population, property rights, rationality, state systems and scientific life have all been invoked to account for Europe’s exceptional path of development. (...) They explain divergence in the same way. They all identify something that made Europe different, to which Europe’s divergent path is then attributed.”

Parthasarathi (2011, p. 1)

“... advances in economic thinking indicate that divergent paths of development need not imply –nor require– deep differences in economic institutions, for context matters. The approach to divergence taken in this work moves away from seeing economic development in the eighteenth century in binary terms, as either leading to modern industry or its failure. Instead, it points to the existence of plural paths of change, which were the products of the pressures and needs that the dynamic and diverse economies of Europe and Asia faced. (...) Britain diverged from Asia, as well as other parts of Europe, not because it possessed rationality, science, markets, capitalism or anything else in greater abundance, but because the pressures and needs it faced –in combination with its state policies– produced a revolutionary response.”

Parthasarathi (2011, p. 2)

“Two pressures were critical in generating British divergence. The first was the competitive challenge of Indian cotton textiles, which in the eighteenth century were the most important manufactured good in world trade and were consumed from the Americas to Japan. British efforts to imitate Indian cloth propelled a search for new techniques of production, which culminated in the great breakthroughs in spinning of the late eighteenth century. These new technologies transformed the world economy and shifted the center of global manufacturing from Asia to Europe. The second was shortages of wood, a consequence of deforestation. The British response was the substitution of coal for wood, which sparked the development of the steam engine, new techniques for the smelting of iron and eventually new means of transport, including the railway and steamship. Neither of these pressures –shortages of wood and competition from global trade– was found in eighteenth-century India. From this perspective, British advances in cotton and coal were solutions to problems that did not exist in the Indian subcontinent.”

Parthasarathi (2011, p. 2)

“In China, as in India, British technological breakthroughs in cotton and coal, while revolutionary, did not address major needs. Therefore, the British path of change was either unnecessary or inadequate for the pressing social, political and economic needs of the advanced parts of Asia in the eighteenth century.”

Parthasarathi (2011, p. 3)

“The Western European path of change was without a doubt extraordinary, but this was not because economic or technological dynamism was unique to that part of the world. Europe followed an exceptional path because it faced a set of pressures which were absent in India and only partly found in China. Therefore, India and China had no need to forge the economic and technological responses that emerged in Europe (...). Industrialization in Western Europe did not emerge from an effort to industrialize. It was an unanticipated, unforeseen and unintended outcome of the economic and social needs that were found in that part of the world.”

Parthasarathi (2011, p. 10)

“... some of the most dynamic sectors in eighteenth-century Europe were those that were seeking to imitate and compete against the products of Asia. Of these, the European encounter with the cotton textiles of India would prove to be the most momentous for the divergence between Europe and Asia. Indian and Chinese manufacturers did not face such global competitive pressures, and, as a consequence, the powerful incentives for innovation that the global economy transmitted to Europe were absent. The second pressure that differed across Europe and Asia lay in (...) the supply of wood. (...) In several parts of Europe and East Asia coal began to be used (...) No one in eighteenth-century Britain anticipated the energy revolution that would be wrought by coal. In India, the abundance of wood meant that there was no need to experiment with coal and the exploitation of its sizable deposits would await the nineteenth century.”

Parthasarathi (2011, p. 10-11)

“... historians must move away from the search for what made Europe economically, socially or culturally different and instead focus on the social needs, economic pressures and political responses that produced different paths of change in the eighteenth century. The British path was a coming together of global competitive pressures, ecological shortfalls and a mercantile state. No other advanced region faced these pressures and combined them with a state that had such capacities to forge a revolutionary response. While the highly commercialized regions of the Indian subcontinent had their own sources of political and economic dynamism, and there was undoubtedly significant technological change taking place, the pressures were not such that radical transformations were needed or risky paths had to be pursued.”

Parthasarathi (2011, p. 263)

## Reference

Parthasarathi, Prasanna (2011): *Why Europe Grew Rich and Asia did not: Global Economic Divergence, 1600–1850*, Cambridge University Press, Cambridge, UK.

## Capitalism and the environment: friend or foe

### Corollary to Herman Daly's Impossibility Theorem of unlimited economic growth in a limited environment

"The continuation for any length of time of capitalism, as a grow-or-die system dedicated to unlimited capital accumulation, is itself a flat impossibility."

Magdoff and Foster (2011, p. 7)

"We are constantly being told by the vested interests (...) that capitalism offers the solution to the environmental problem: as if the further growth of capital markets, green consumption, and new technology provide us with miraculous ways out of our global ecological dilemma. Such views are rooted in an absolute denial of reality (...) In this makebelieve (...) the wondrous workings of markets, perhaps tweaked here or there by regulations and incentives, make miracles possible. In the process, the laws of physics, chemistry, biology, and ecology—as well as the limits of the earth—are simply conjured away."

Magdoff and Foster (2011, p. 7)

"Environmental degradation is not new to today's world but has occurred throughout recorded history with profound negative consequences for a number of ancient civilizations (...) What makes the modern era stand out in this respect, however, is that there are many more of us inhabiting more of the earth; we have technologies that can do much greater damage and do it more quickly; and we have an economic system that knows no bounds."

Magdoff and Foster (2011, pp. 11-12)

"One of the latest, most important developments in Earth system science, developed by leading scientists, is the concept of 'planetary boundaries,' in which nine critical boundaries/thresholds of the earth system have been designated (or are being considered) in relation to:

- (1) climate change;
- (2) ocean acidification;
- (3) stratospheric ozone depletion;
- (4) the biogeochemical flow boundary (the nitrogen and phosphorus cycles);
- (5) global freshwater use;
- (6) change in land use;
- (7) biodiversity loss;
- (8) atmospheric aerosol loading; and
- (9) chemical pollution.

Staying within each of these boundaries is considered essential to maintaining the relatively benign climate and environmental conditions that have existed during the last 12,000 years (the Holocene epoch). The sustainable boundaries in three of these systems—climate change, biodiversity, and human interference with the nitrogen cycle (...)—have already been crossed."

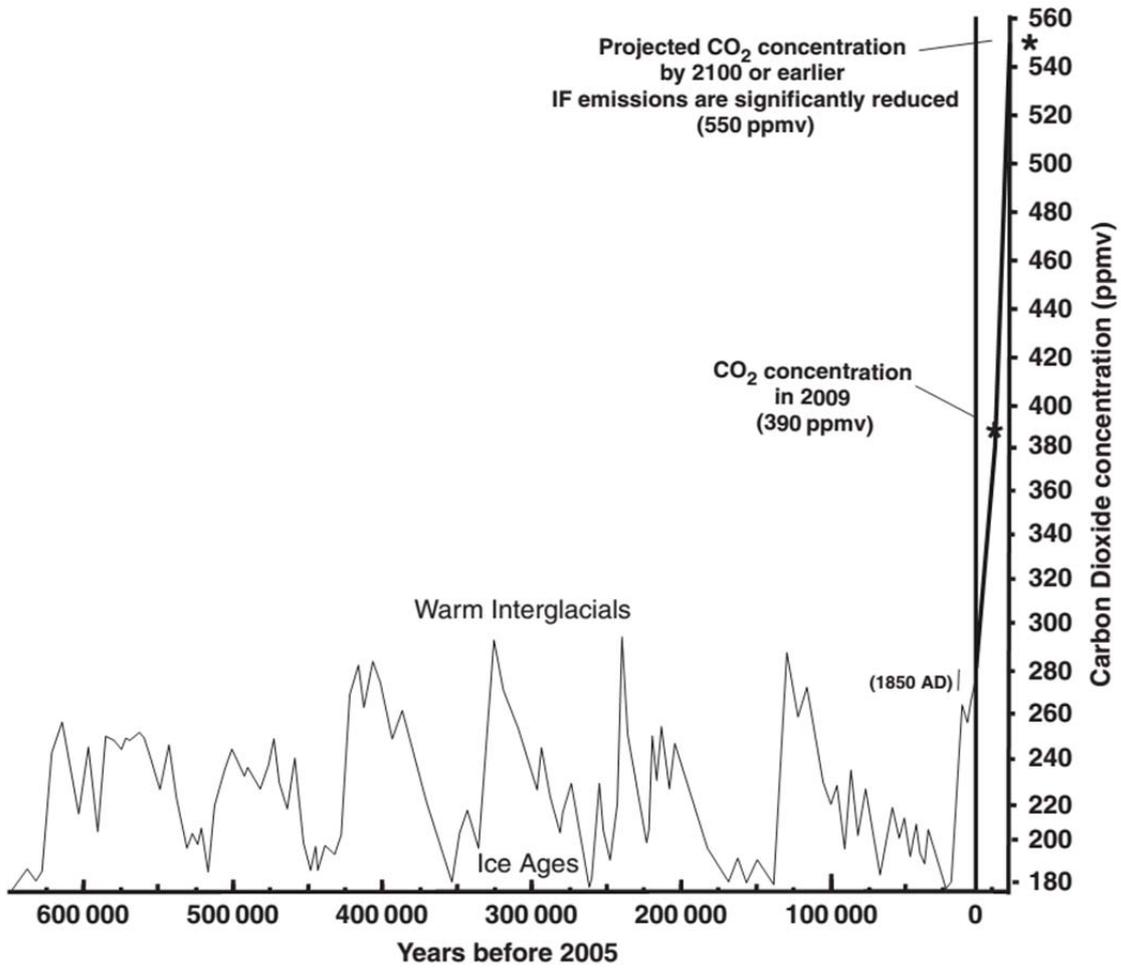
Magdoff and Foster (2011, pp. 12-13)

"We strongly agree with those environmentalists who have concluded that continuing 'business as usual' is the path to global disaster. To many people, this means that we must limit the ecological footprint of human beings on the earth, and to do this, we need an economy—particularly in the rich countries—that ceases to grow."

Magdoff and Foster (2011, p. 27)

"... if the overall economic pie is not growing, or is growing very slowly, it is still possible for those with power to get much bigger slices, but only by dishing out diminished portions to everyone else. (...) One of the ways in which the system tries to revitalize capital accumulation and growth under [recessions] is by removing protections for the environment, which are considered an unaffordable luxury in hard economic times. Insofar as this helps the capitalist economy recover, however, it is often doubly destructive of the environment: since not only have environmental protections been relaxed to spur growth, but the expanding economy now draws on more energy and resources."

Magdoff and Foster (2011, p. 60)



Hetherington and Reid (2010, p. 5)

**Reference**

Hetherington, Renee; Robert G. B. Reid (2010): Climate change and modern human evolution  
 Magdoff, Fred; John Bellamy Foster (2011): What Every Environmentalist Needs to Know about Capitalism: A Citizen's Guide to Capitalism and the Environment, Monthly Review Press, New York.

## Golden Rules of Regional Growth

Ratio: Richest to Poorest Regions\*

Year	1980	2000
Japan	1.50	1.48
UK	1.46	1.59
France	1.60	1.63
Canada	2.41	1.68
Spain	1.97	1.93
US	2.19	2.02
Italy	2.12	2.12
India	3.13	4.81
Mexico	5.08	5.04
Brazil	6.79	5.59
China	7.27	9.07

\*Ratio of two regions with highest GDP per person over two regions with lowest GDP per person

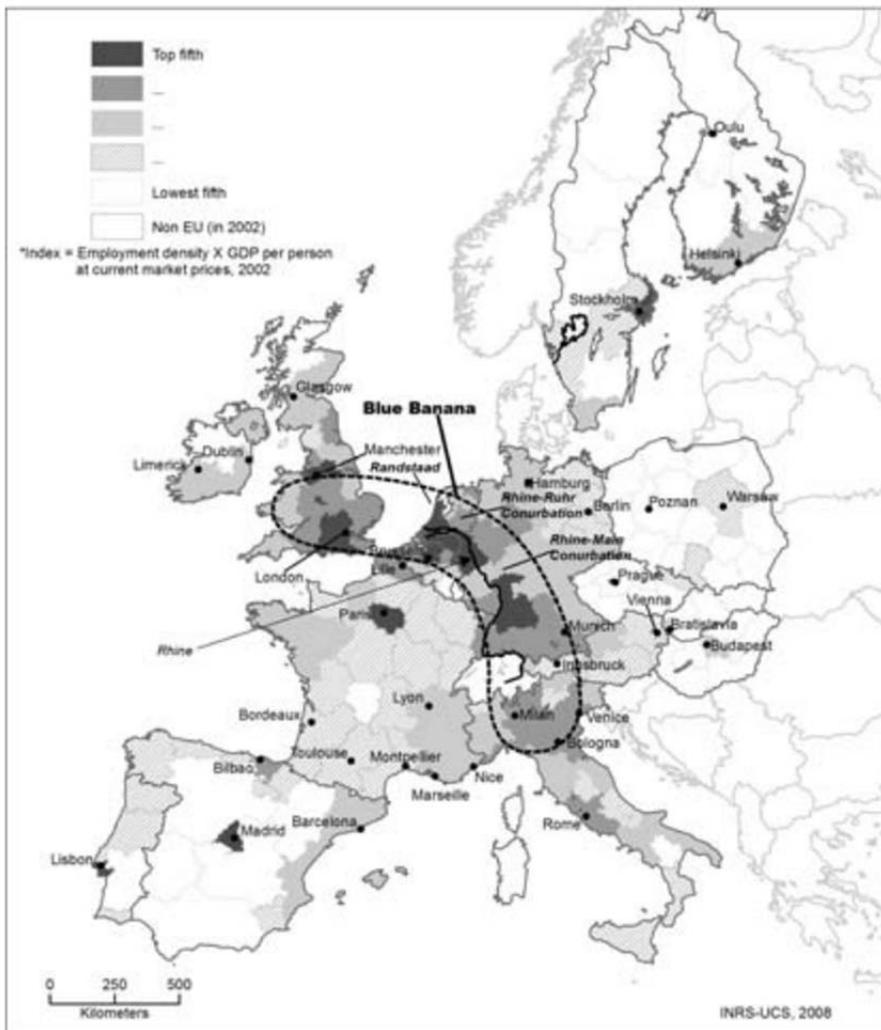
Polèse (2009, p. 5)

“China was easily the extreme case, with differences in average income as high as ten to one between the richest and the poorest regions. (...) One naturally wonders whether such regional differences are the natural outcome of national economic growth and the workings of modern market economies. Are regional welfare inequalities unavoidable—a necessary condition of prosperity?”

Polèse (2009, p. x)

“Competition between places, communities, and regions is not exactly the same as competition between nations. The fundamental difference is openness. Places, communities, and regions do not have real economic boundaries, although they can have political or administrative boundaries.”

Polèse (2009, p. 8)



MAP 1. Density of economic activity: Europe. The highest densities of economic activity in western Europe are found in a Banana-shaped arc that largely follows the path of the Rhine, also extending across the Channel into England and across the Alps into Italy. This central feature of Europe’s economic geography has remained surprisingly stable in modern times. Elsewhere, activity is densest in and around capital cities: Paris, Madrid, Rome, Stockholm, etc. Note also the high densities in the English Midlands—around Manchester—the birthplace of the Industrial Revolution.

“... the geography of wealth can be reduced to what I shall call the **Four Golden Rules of Regional Growth**. Within nations, where wealth is created and where jobs emerge will in large part depend on four factors: size, location, cost, and unique events:

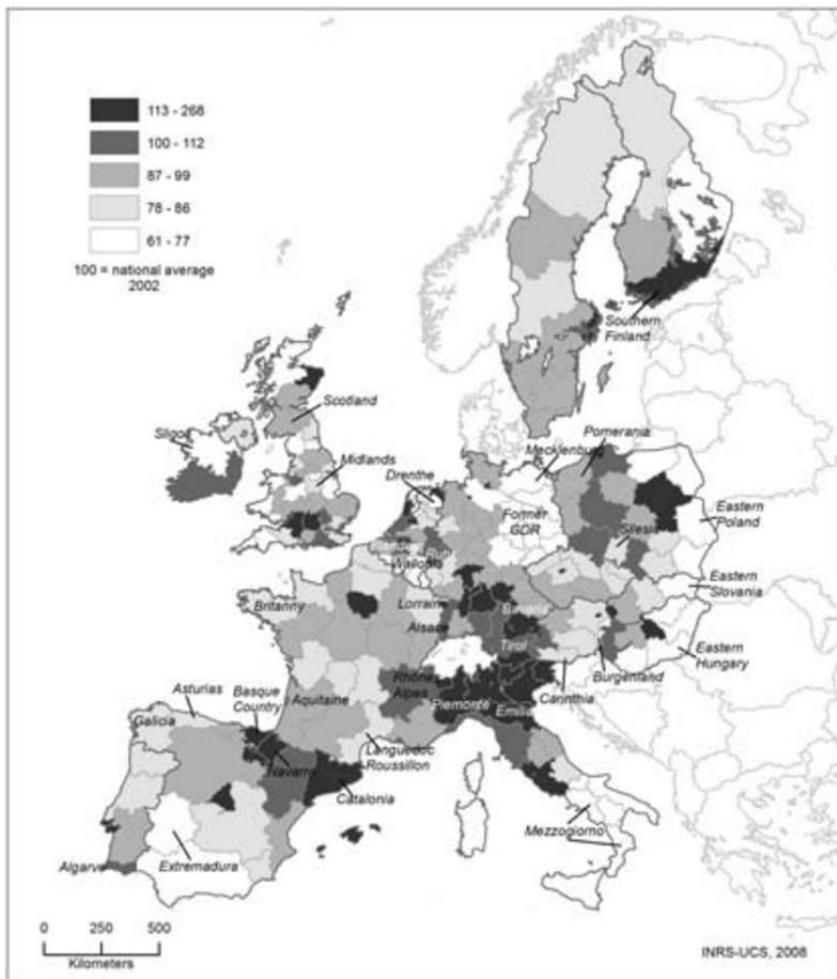
**Rule 1**—Size matters because dynamic industries (the most advanced in each age) are naturally drawn to large cities and places within easy reach. Within nations, rule 1 will produce economic centers—dense multi-city constellations of economic activity. The corollary of size matters is that proximity to size—to urban centers—also matters.

**Rule 2**—Location matters because industries (selling tradable products) are drawn to places best suited for commerce and interaction with markets. Within nations, places located on trade corridors or closest to the nation’s major trading partners will be favored

**Rule 3**—Costs matter because—failing adequate size or a propitious location—places will grow if they have a clear labor cost advantage or, alternatively, an exceptional resource endowment. However, the latter of en precludes the former, as illustrated by the Invasive Rentier Syndrome.

**Rule 4**—Exceptions abound because unique events and accidents—history, politics, and technological change—can cause growth (or decline) to occur in places one would not have initially predicted on the basis of the three previous rules.”

Polèse (2009, pp. 28-29)



MAP 2. GDP per capita by region, compared to national average: Europe. The map shows GDP (gross domestic product) per person compared to *national* averages for seventeen EU nations. In nations lying outside the Blue Banana, the poorest regions are most often those most distant from it: southwestern Spain, Italy's Mezzogiorno, eastern Poland, northern Scotland, etc. Note the poor performance of the former GDR *Länder* of Germany and of Wallonia in Belgium.

“Wealth differences between places exist in every nation. In the U.S., average product person in the two richest states is about twice that of the two poorest. In developing nations such as India and China, the gap between rich and poor regions is generally much greater.”  
Polèse (2009, pp. 4-5)

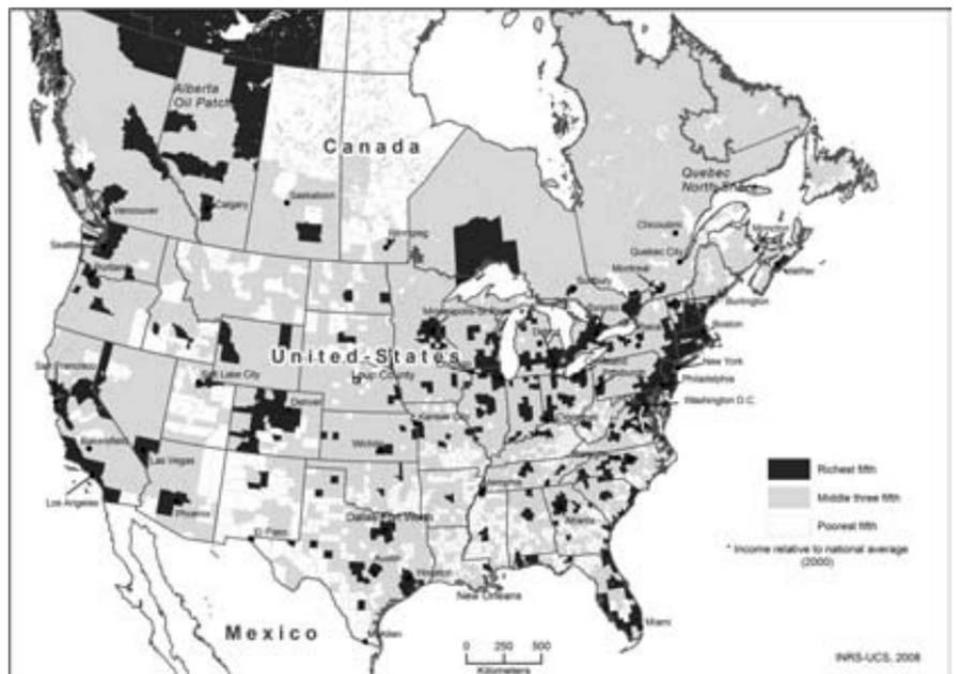
“The evidence (...) suggests that long-term economic growth does indeed lead to a reduction in regional income differences. (...) data exist for the United States and for Canada (...). The results are unequivocal. Regional income disparities have fallen dramatically in both nations over the last century.”  
Polèse (2009, p. 97)

“... it is difficult to argue—based on North American and western European experiences—that economic integration, labor mobility, and economic growth do not over time promote greater income equality between regions.”  
Polèse (2009, p. 99)

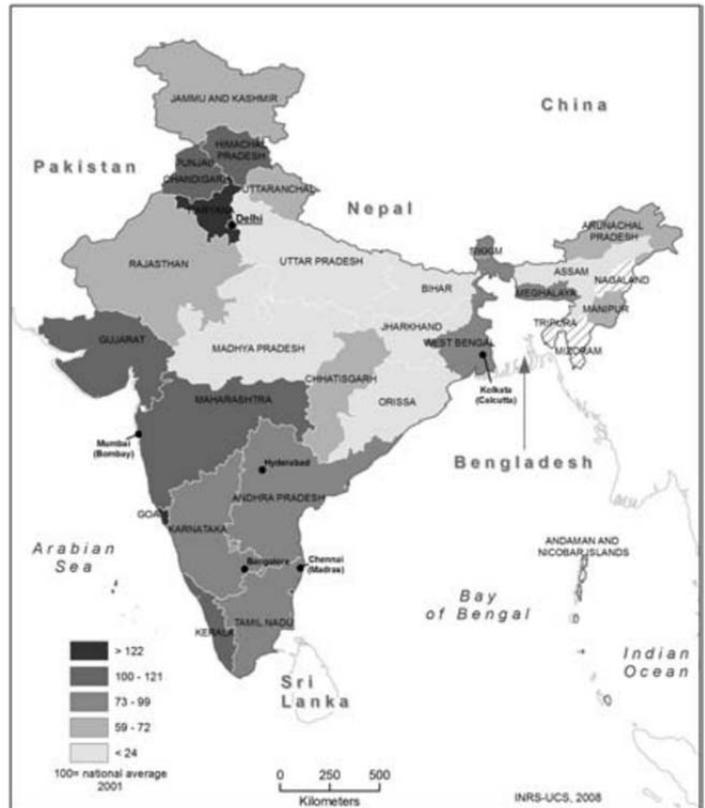
“Explaining why the U.S. or Britain is richer than, say, Nigeria is not at all the same thing as explaining why certain places in the U.S. or Britain are richer—or growing more rapidly—than other places in the U.S. or Britain.”  
Polèse (2009, p. 2)

“If place no longer mattered, differences in economic fortune within nations—between different places—should have disappeared (or at least be in the process of disappearing), certainly within the world’s more economically advanced nations. The evidence tells the opposite story. In United States—arguably the world’s most mobile society with a long history of free movement and exchange between places—income differences between places are far from insignificant.”  
Polèse (2009, p. 3)

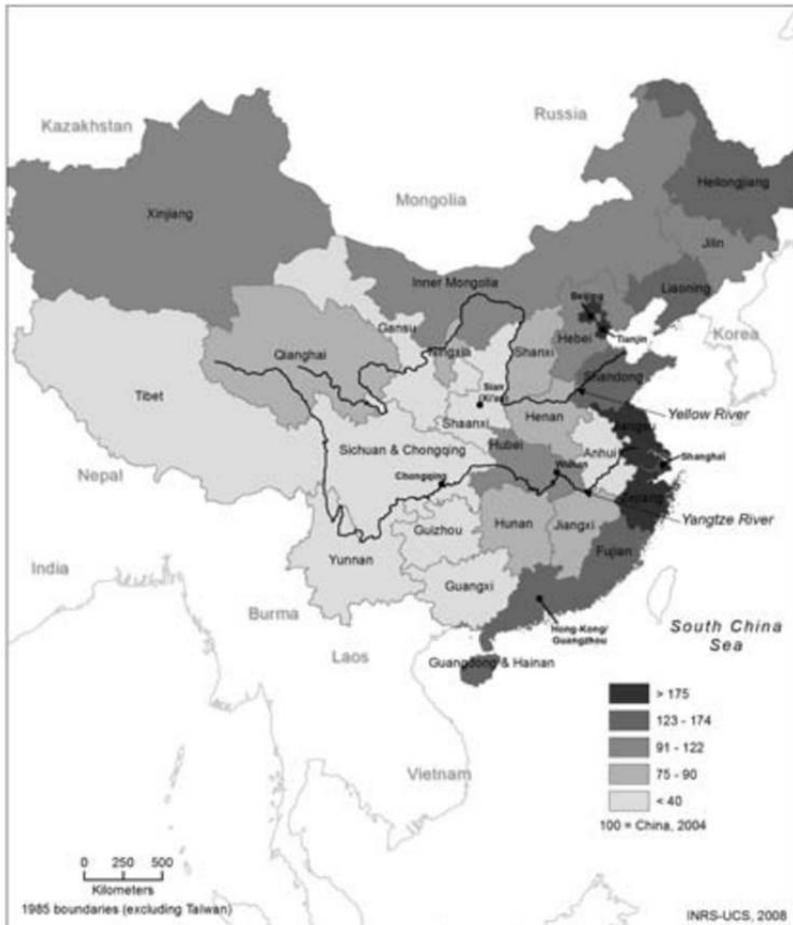
“The positive relationship between city size and higher incomes is one of the best documented in regional economics. (...) But why should size still matter in the age of the Internet?”  
Polèse (2009, p. 4)



MAP 5. Income per person; richest fifth, poorest fifth: US and Canada. The largest urban conurbations generate the highest incomes. The coastal megalopolis stands out as the greatest concentration of wealth. Note also the high incomes in West Coast and in Texan cities, around Minneapolis–St. Paul and Denver, as well as in south Florida and southern Ontario. High incomes in parts of northern Canada reflect high-wage resource industries (lumber, oil, mining, and smelting).



MAP 9. GDP per person by state: India. Development in India is regionally more dispersed; compare with Mexico and China. The high income states of Maharashtra (with Mumbai), West Bengal (with Calcutta), Kerala, and Haryana (plus Delhi) are respectively located in the west, east, south, and north of India. The poorest areas are not in the geographic peripheries, but rather near the center of the nation. Bihar and Uttar Pradesh, among the poorest states, lie along the densely populated Ganges valley in the heart of India.



MAP 10. GDP per person by region: China. China's rapid economic growth and uneven institutional reforms—the coastal areas were the first to liberalize—have produced sharp regional disparities. Incomes in greater Shanghai, the richest region, are some ten times higher than in Guizhou, the poorest. Growth has concentrated in the coastal provinces, which also account for the lion's share of foreign trade and of foreign direct investment.

#### “What Have We Learned?”

- Some Places Will Always Be Wealthier Than Others
  - Cities Will Continue to Grow
  - The Diversification of the Sources of Regional Growth
  - The Never-ending Search for the Right Strategy
  - The New Importance of Place: People”
- Polèse (2009, p. 195-207)

“Perhaps the most important lesson to be drawn from this book is that the reasons for which a particular place prospers (or does not) will seldom be exactly that same as that for another. The search for a single explanation is understandable, but also futile. By the same token, the search for a magic formula that will deliver growth or arrest decline is no less understandable, but equally futile. The search for the right policy lever is ultimately as fruitless as the search for a pill to cure all human ailments.”

Polèse (2009, p. 205)

#### Reference

Polèse, Mario (2009): *The Wealth and Poverty of Regions: Why Cities Matter*, The University of Chicago Press, Chicago, Illinois.

## Rodrik's trilemma

“Globalization—by which I mean enhanced trade and financial integration—poses both opportunities and challenges to the mixed economy. On the plus side, the global expansion of markets promises greater prosperity through the channels of division of labor and specialization according to comparative advantage. This opportunity is of particular significance to developing countries, since it allows them access to state-of-the-art technology and cheap capital goods on world markets. But globalization also undercuts the ability of nation-states to erect regulatory and redistributive institutions, and does so at the same time that it increases the premium on solid national institutions. Social safety nets become more difficult to finance just as the need for social insurance becomes greater; financial intermediaries increase their ability to evade national regulation just as prudential supervision becomes more important; macroeconomic management becomes trickier just as the costs of policy mistakes are amplified. Once again, the stakes are greater for the developing countries, since they have weak institutions to begin with.”

Rodrik (2007, pp. 195-196)

“The dilemma that we face (...) is that markets are striving to become global while the institutions needed to support them remain by and large national (...) the implications of this discrepancy are twofold. On the one hand, the existence of jurisdictional boundaries, drawn largely along national lines, restricts economic integration. This inhibits efficiency. On the other hand, the desire by producers and investors to go global weakens the institutional base of national economies. This inhibits equity and legitimacy. Taken together, the two processes drive us toward a no-man’s world. Exporters, multinationals, and financiers complain about impediments to trade and capital flows. Labor advocates, environmentalists, and consumer safety activists decry the downward pressures on national standards and legislation. Broad sections of the populace treat globalization as a dirty word while happily devouring its fruits. And government officials vacillate, trying to please each group in turn while satisfying none. In the long run, the way out of the dilemma is to envisage a world in which politics is as global as economics. This would be a world of global federalism, with the mixed economy reconstructed at the global level.”

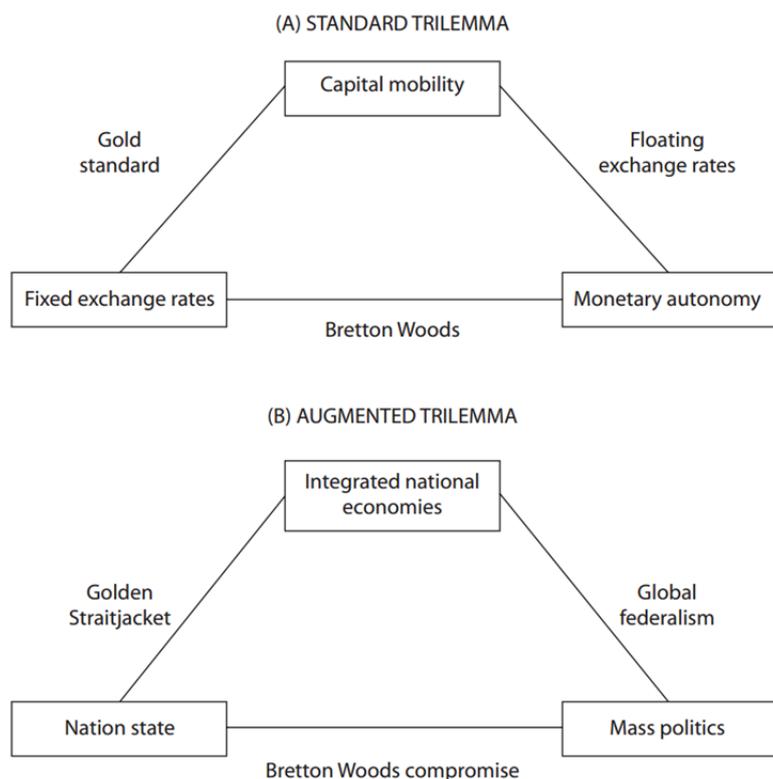
Rodrik (2007, p. 196)

“How global is the global economy in reality? The natural benchmark for thinking about economic globalization is to consider a world in which markets for goods, services, and factors of production are perfectly integrated. (...) Contrary to conventional wisdom and much punditry, international economic integration remains remarkably limited. (...) Integration in asset markets remains also limited. Investment portfolios in the advanced industrial countries typically exhibit large amounts of “home bias”: that is, people invest a higher proportion of assets in their own countries than the principles of asset diversification would seem to suggest.”

Rodrik (2007, p. 197)

“... the political trilemma of the world economy. The three nodes of the extended trilemma are international economic integration, the nation-state, and mass politics.”

Rodrik (2007, p. 199)



“I use the term nation-state to refer to territorial-jurisdictional entities with independent powers of making and administering the law. I use the term mass politics to refer to political systems where (a) the franchise is unrestricted; (b) there is a high degree of political mobilization; and (c) political institutions are responsive to mobilized groups. (...) If we want true international economic integration, we have to go either with the nation-state, in which case the domain of national politics will have to be significantly restricted, or else with mass politics, in which case we will have to give up the nation-state in favor of global federalism. If we want highly participatory political regimes, we have to choose between the nation-state and international economic integration. If we want to keep the nation-state, we have to choose between mass politics and international economic integration.”

Rodrik (2007, pp. 199-200)

“... consider our hypothetical perfectly integrated world economy. This would be a world economy in which national jurisdictions do not interfere with arbitrage in markets for goods, services or capital. Transaction costs and tax differentials would be minor; product and regulatory standards would be harmonized; there would be a common monetary system; and convergence in commodity prices and factor returns would be almost complete.”  
Rodrik (2007, pp. 200-201)

“The price of maintaining national jurisdictional sovereignty while markets become international is that politics have to be exercised over a much narrower domain. “As your country puts on the Golden Straitjacket,” Friedman notes (...), two things tend to happen: your economy grows and your politics shrinks. . . . [The] Golden Straitjacket narrows the political and economic policy choices of those in power to relatively tight parameters. That is why it is increasingly difficult these days to find any real differences between ruling and opposition parties in those countries that have put on the Golden Straitjacket.”  
Rodrik (2007, p. 202)

“... once the rules of the game are set by the requirements of the global economy, the ability of mobilized popular groups to access and influence national economic policymaking has to be restricted.”  
Rodrik (2007, p. 202)

### **Reference**

Rodrik, Dani (2007): *One Economics, Many Recipes: Globalization, Institutions, and Economic Growth*, Princeton University Press, Princeton, New Jersey.

## Was the rise of the West due to the rise of the brain's left hemisphere?

"One of the more durable generalisations about the hemispheres has been the finding that the left hemisphere tends to deal more with pieces of information in isolation, and the right hemisphere with the entity as a whole, the so-called Gestalt – possibly underlying and helping to explain the apparent verbal/visual dichotomy, since words are processed serially, while pictures are taken in all at once."

"the most fundamental difference between the hemispheres lies in the type of attention they give to the world (...) A central theme of this book is the importance of our disposition towards the world and one another, as being fundamental in grounding what it is that we come to have a relationship with, rather than the other way round. The kind of attention we pay actually alters the world: we are, literally, partners in creation. (...) Ultimately I believe that many of the disputes about the nature of the human world can be illuminated by an understanding that there are two fundamentally different 'versions' delivered to us by the two hemispheres, both of which can have a ring of authenticity about them, and both of which are hugely valuable; but that they stand in opposition to one another, and need to be kept apart from one another – hence the bihemispheric structure of the brain."

"... the relationship between the hemispheres does not appear to be symmetrical, in that the left hemisphere is ultimately dependent on, one might almost say parasitic on, the right, though it seems to have no awareness of this fact. Indeed it is filled with an alarming self-confidence."

"... it is as if the left hemisphere, which creates a sort of self-reflexive virtual world, has blocked off the available exits, the ways out of the hall of mirrors, into a reality which the right hemisphere could enable us to understand. In the past, this tendency was counterbalanced by forces from outside the enclosed system of the self-conscious mind; apart from the history incarnated in our culture, and the natural world itself, from both of which we are increasingly alienated, these were principally the embodied nature of our existence, the arts and religion. In our time each of these has been subverted and the routes of escape from the virtual world have been closed off. An increasingly mechanistic, fragmented, decontextualised world, marked by unwarranted optimism mixed with paranoia and a feeling of emptiness, has come about, reflecting, I believe, the unopposed action of a dysfunctional left hemisphere."

"The right hemisphere, the one that believes, but does not know, has to depend on the other, the left hemisphere, that knows, but doesn't believe. It is as though a power that has an infinite, and therefore intrinsically uncertain, potential Being needs nonetheless to submit to be delimited – needs stasis, certainty, fixity – in order to Be. The greater purpose demands the submission. The Master needs to trust, to believe in, his emissary, knowing all the while that that trust may be abused. The emissary knows, but knows wrongly, that he is invulnerable. If the relationship holds, they are invincible; but if it is abused, it is not just the Master that suffers, but both of them, since the emissary owes his existence to the Master."

"... since the left hemisphere is the hemisphere of What, quantity would be the only criterion that it would understand. The right hemisphere's appreciation of How (quality) would be lost. As a result considerations of quantity might come actually to replace considerations of quality altogether, and without the majority of people being aware that anything had happened. Numbers, which the left hemisphere feels familiar with and is excellent at manipulating (though (...) it is less good at understanding what they mean), would come to replace the response to individuals, whether people, places, things or circumstances, which the right hemisphere would have distinguished. 'Either/or' would tend to be substituted for matters of degree, and a certain inflexibility would result."

"The left hemisphere prefers the impersonal to the personal, and that tendency would in any case be instantiated in the fabric of a technologically driven and bureaucratically administered society. The impersonal would come to replace the personal. There would be a focus on material things at the expense of the living. Social cohesion, and the bonds between person and person, and just as importantly between person and place, the context in which each person belongs, would be neglected, perhaps actively disrupted, as both inconvenient and incomprehensible to the left hemisphere acting on its own. There would be a depersonalisation of the relationships between members of society, and in society's relationship with its members. Exploitation rather than co-operation would be, explicitly or not, the default relationship between human individuals, and between humanity and the rest of the world. Resentment would lead to an emphasis on uniformity and equality, not as just one desirable to be balanced with others, but as the ultimate desirable, transcending all others. As a result individualities would be ironed out and identification would be by categories: socioeconomic groups, races, sexes, and so on, which would also feel themselves to be implicitly or explicitly in competition with, resentful of, one another. Paranoia and lack of trust would come to be the pervading stance within society both between individuals, and between such groups, and would be the stance of government towards its people."

"it is an essential feature of the left hemisphere's take on the world that it can grasp it and control it."

"Family relationships, or skilled roles within society, such as those of priests, teachers and doctors, which transcend what can be quantified or regulated, and in fact depend on a degree of altruism, would become the object of suspicion. The left

hemisphere misunderstands the nature of such relationships, as it misunderstands altruism as a version of self-interest, and sees them as a threat to its power.”

“Most countries studied show either a decrease or at least no change in well-being despite an increase in prosperity; and no relationship can be found between happiness and economic growth. The main determinants of happiness, as one might have expected, are not economic in nature.”

“I do not underestimate the importance of the left hemisphere's contribution to all that humankind has achieved, and to all that we are, in the everyday sense of the word; in fact it is because I value it, that I say that it has to find its proper place, so as to fulfil its critically important role. It is a wonderful servant, but a very poor master.”

“... a number of thinkers have observed, often with a sense of unease, that over history intuition has lost ground to rationality; but in general their unease has been tempered by the feeling that this must be in a good cause. I also referred to Panksepp, who posits an evolutionary process involving the disconnection of cognitive from emotional processes.”

“... we have already fallen for the left hemisphere's propaganda – that what it does is more highly evolved than what the right hemisphere does. This shift is not about evolution, nor even about emotion versus cognition: it is about two modes of being, each with its cognitive and emotional aspects, and each operating at a very high level. It is not about something more evolved competing with something more primitive: in fact the losing party in this struggle, the right hemisphere, is not only more closely in touch with emotion and the body (therefore with the neurologically ‘inferior’ and more ancient regions of the central nervous system) but also has the most sophisticated and extensive, and quite possibly most lately evolved, representation in the prefrontal cortex, the most highly evolved part of the brain.”

“... even in its own terms, the left hemisphere is bound to fail. That will, however, not stop it from persisting in its current path. And the task of opposing this trend is made more difficult by the fact that two of the main sources of non-materialistic values, which might therefore have led to resistance, are both prime targets of the process that the left hemisphere has set in motion. We have no longer a consistent coherent tradition in the culture, which might have passed on, in embodied and intuitive form, the fruits of experience of our forebears, what used to form the communal wisdom – perhaps even common sense, to which modernism and post-modernism are implacably opposed. The historic past is continually under threat of becoming little more than a heritage museum, whereby it becomes reconstructed according to the stereotypes of the left hemisphere. And the natural world used to be another source of contact with something that still lay outside the realm of the self-constructed, but that is on the retreat, and many people in any case lead lives almost completely devoid of contact with it.”

“... there is in fact much evidence that East Asians and Westerners perceive the world and think about it in very different ways. In general, East Asians have a more holistic approach. For example, if asked to group objects, East Asians make comparatively little use of categories. They are more likely to attend to the broad perceptual and conceptual field, noticing relationships and changes, and grouping objects according to family resemblances, based on an appreciation of the whole, rather than on membership of a category. Westerners are significantly more likely to give one-dimensional, rule-based responses, based on individual components of the stimuli. East Asians also rely less on formal logic, instead focussing on relations among objects and the context in which they interact. They use more intuitive modes compared with Americans of European origin. They see events as arising from an entire context, and tend to think in a much less linear, and more global way, about causation. By contrast Westerners tend to focus exclusively on the object as cause, and are therefore often mistaken. Westerners are more analytic, and pay attention primarily to isolated objects, and the categories to which they belong. They tend to use rules, including formal logic, to understand their behaviour. These effects remain when language is controlled for.”

“East Asians use a more ‘dialectical’ mode of reasoning: they are more willing to accept, to entertain, or even seek out contradictory perspectives on the same issue. They see the world in which they live as complex, containing inherently conflicting elements. (...) Presented with evidence for two opposing positions, Easterners are more likely to reach a compromise, whereas the fact of opposition tends to make Westerners adhere to one position more strongly. Westerners adopt a more ‘either/or’ approach.”

“I think there is by now enough consistent evidence, from a variety of sources, and of a variety of types, for us to accept something which seems intuitively likely: that there are differences between the way in which Westerners and East Asians see the world, and that these have something to do with the balance of the hemispheres (...) a greater reliance in the West on the left hemisphere.”

“What the evidence suggests (...) is that the East Asian cultures use strategies of both hemispheres more evenly, while Western strategies are steeply skewed towards the left hemisphere. In other words, the emissary appears to work in harmony with the Master in the East, but is in the process of usurping him in the West.”

“... we might have to revise the superior assumption that we understand the world better than our ancestors, and adopt a more realistic view that we just see it differently – and may indeed be seeing less than they did”.

“In 1973, Chris McManus and Nick Humphrey had already published in Nature the results of a study of approximately 1,400 Western portrait paintings from the sixteenth to twentieth centuries, showing that there is a tendency during this period, also, for the sitter to be portrayed looking to the viewer's left. These findings have since been confirmed by others. The implication appears to be that the focus of interest comes to lie in the viewer's left visual field (preferentially subserved by the right hemisphere), at the same time that the more emotionally expressive left hemiface of the subject (controlled by the subject's right hemisphere) is exposed to view.”

### Shift from right to left facing

“The ‘natural’ tendency, as exhibited by the majority of face profiles drawn by children, is still to face left, even in some cases if they are copying a model that is facing to the right.”

“... in syllabic languages concepts are put together from syllables which have meaning in themselves. Although modern Western languages are not syllabic, but phonemic, we can get an idea of what this is like if we remain aware of the etymology of English (or German, or other Western) words – if we are sufficiently aware of a word's structure, and of the original meanings of the component parts. In syllabic languages, therefore, meaning is less arbitrary, more clearly rooted in the world out of which it emanates, and retains its metaphoric base to a greater extent. (...) In both these respects syllabic languages favour understanding by the right hemisphere, whereas phonemic languages favour that of the left hemisphere.”

“The right hemisphere prefers vertical lines, but the left hemisphere prefers horizontal lines. If lines are vertical, the left hemisphere prefers to read them from the bottom up, whereas the right hemisphere prefers to read from the top down. In almost every culture writing has begun by being vertical. Some, such as the oriental languages, remain vertical: they are also generally read from the top down, and from right to left. In other words, they are read from the maximally right-hemisphere-determined point of view. Although both oriental and Western languages are generally read from the top down, so that at the global level they still conform to the right-hemisphere preference, at the local, sequential level they have drifted in the West towards the left hemisphere's point of view. This process started with the move to phonetics.”  
McGilchrist (2009)

Of what significance is facial orientation? As we have seen (Chapter II), the right optic tract of both eyes transmits the left visual field to the right hemisphere. By a similar process, the left hemisphere first processes the right visual field. Experiments have also established that the activation of a hemisphere results in eye scan toward the space of the opposite side. Hence, when using the right hemisphere, such as when working out "visuospatial problems," most individuals today tend to gaze to the left. When using the left hemisphere, as in working out verbal or reasoning problems, the gaze is rightward.<sup>5</sup>

From 600 B. C. to the present, over 80% of all profiles, at least from the literate cultures studied by Hufschmidt, faced left, as they do today, indicating a leftward gaze of the artist while working, and resulting in the projection of the facial image first to the brain's right hemisphere. These percentages apply, of course,

Hufschmidt concluded that this change in preference was based in biology, not in convention or tradition. It resulted, he claims, from an increased dominance of the right cerebral hemisphere in visual perception. This change, which occurred within a few generations, was accompanied by three centuries of development in Greek culture from the archaic to the classical Greek culture.

Yet prior to about 600 B.C., Hufschmidt found that 60% of the profiles in the art objects examined, mostly Paleolithic, Assyrian, Egyptian, Sumerian, and archaic Greek, faced right. The viewer or artist, thus, more often than not, viewed the subject's facial features in the right visual field, with the image being transmitted first to the left cerebral hemisphere. Further, the gaze of the artist as he executed his work would have been toward the right.

However, beginning in approximately 600 B.C., the shift occurred. It was almost coincident with the rise of Greek philosophy, the first to adhere to the principle articulated by Alexander Pope many years later, that the proper study of mankind is man. It was almost coincident also with the rise of great religions in areas of Greek influence, the central tenets of these religions being the oneness of humankind. And it occurred just a century before the beginning of the classical Greek fluorescence.

Hufschmidt cites as examples five developments in human thought and behavior attributable to the Greeks in this period, all, he states, mediated in varying degrees by the right cerebral hemisphere. They include: 1) The axioms of mathematics (purely intuitive); 2) A breakthrough in the use of symbolism in speech, from the first murky writings of Parmenides to the broad but precise range of speech of Aristotle; 3) The development of the theater of self-reflection (related to individualism); 4) The reduction of the visual world to a geographical land map; 5) The capacity to portray three-dimensional perspective as opposed to the two-dimensional art found in other ancient populations.

Brener

### Left-wing profile

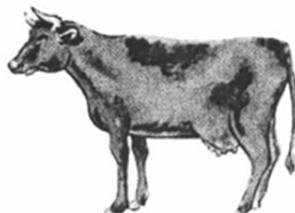


“The preference for the left profile direction is traced back to the early Greek period in paintings, drawings, coin portraits, gems, cameos, and vase portraits. Fifty thousand objects have been analyzed. A 60% prevalence of face direction towards the right occurs in the cultural centers of the Mediterranean before 600 B.C. Before the early Greek period: the Assyrian, Egyptian, and Sumerian cultures faced more profiles to the right. This tendency for right profile direction can be traced back to Stone Age cave drawings. The profile shift from right to left occurs in the early Greek period and is related to a shift in script and in letter profile at the same time. This profile shift occurs simultaneously with an acceleration of intellectual and cultural development which also influenced our present culture. Although the percentage of right handers might not have changed considerably since the Stone Age, the profile shift from right to left suggests a

hypothetical change in dominance of the cerebral hemispheres for higher visual perception which may have induced a left preference in the period around 600 B.C.”

McGilchrist (2009)

### Categories vs relationships



A



B



C

With what object would you pair A? (or B or C?) Westerners put together A and B; Chinese, put together A and C.  
Nisbett (2003, p. 141)

“If you’re a Westerner, odds are you think the chicken and the cow belong together. Developmental psychologist Liang-hwang Chiu showed triplets like that in the illustration to American and Chinese children. Chiu found that the American children preferred to group objects because they belonged to the “taxonomic” category, that is, the same classification term could be applied to both (“adults,” “tools”). Chinese children preferred to group objects on the basis of relationships. They would be more likely to say the cow and the grass in the illustration go together because ‘the cow eats the grass.’”  
Nisbett (2003, p. 140)

“Categories are denoted by nouns. It seems obvious that nouns would be easier for a young child to learn than verbs. Relationships, on the other hand, involve, tacitly or explicitly, a verb. **American children are learning that the world is mostly a place with objects, Japanese children that the world is mostly about relationships.**

There is an Asian expression that reflects a cultural prejudice against individuality: “The peg that stands out is pounded down.” In general, East Asians are supposed to be less concerned with personal goals or self-aggrandizement than are Westerners. Group goals and coordinated action are more often the concerns. Maintaining harmonious social relations is likely to take precedence over achieving personal success. Success is often sought as a group goal rather than as a personal badge of merit. Individual distinctiveness is not particularly desirable. For Asians, feeling good about themselves is likely to be tied to the sense that they are in harmony with the wishes of the groups to which they belong and are meeting the group’s expectations. Equality of treatment is not assumed nor is it necessarily regarded as desirable.”  
Nisbett (2003, pp. 48-49)

“Westerners emphasize distinctiveness – they want to be distinctive, under control and pursuing their own goals.”

“Chinese people are inclined to attribute behavior to context and Americans tend to attribute the same behavior to the actor.”  
Nisbett (2003, p. 114)

“Americans regard personalities as relatively fixed and Asians regard them as more malleable. This is consistent with the long Western tradition of regarding the world as being largely static and the long Eastern tradition of viewing the world as constantly changing.”  
Nisbett (2003, p. 130)

“East Asian languages are highly “contextual.” English words are relatively distinctive and English speakers in addition are concerned to make sure that words and utterances require as little context as possible (...) Americans start with describing an object whereas Japanese start by establishing the context.”

“Most Western languages are ‘agentive’ in the sense that the language conveys that the self has operated on the world: ‘He dropped it.’ (An exception is Spanish.) Eastern languages are in general relatively nonagentive: ‘It fell from him,’ or just ‘fell.’”

“In Chinese one asks “Drink more?” In English, one asks “More tea?” To Chinese speakers, it’s perfectly obvious that it’s tea that one is talking about drinking more of, there is good evidence that for East Asians the world is seen much more in terms of relationships than it is for Westerners, who are more inclined to see the world in terms of static objects that can be grouped into categories.”

Nisbett (2003, p. 162)

## **References**

Brener, Milton E.: Faces: The changing look of humankind

Hufschmidt, Hans-Joachim (1980): Das Rechts-Links-Profil im kulturhistorischen Längsschnitt, *European Archives of Psychiatry and Clinical Neuroscience* 229(1), 17-43

McGilchrist, Iain (2009): *The master and his emissary: the divided brain and the making of the Western world*, Yale University Press, New Haven.

Nisbett, Richard E. (2003): *Asians and Westerners think differently*

## The theory of the five personalities

### **Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness to Experience recognized as genetically based, stable, and crossculture generalizable**

“Factor I : Extraversion (AKA Surgency)

This trait reflects preference for, and behavior in, social situations. People high in extraversion are energetic and seek out the company of others. Low scorers (introverts) tend to be more quiet and reserved. Compared to other people who have taken this test, your score on this dimension (18) is relatively low.

Factor II : Agreeableness (AKA Friendliness)

This trait reflects how we tend to interact with others. People high in agreeableness tend to be trusting, friendly and cooperative. Low scorers tend to be more aggressive and less cooperative. Compared to other people who have taken this test, your score on this dimension (28) is about average.

Factor III : Conscientiousness (AKA Will or Dependability)

This trait reflects how organized and persistent we are in pursuing our goals. High scorers are methodical, well organized and dutiful. Low scorers are less careful, less focussed and more likely to be distracted from tasks. Compared to other people who have taken this test, your score on this dimension (41) is relatively high.

Factor IV : Neuroticism

This trait reflects the tendency to experience negative thoughts and feelings. High scorers are prone to insecurity and emotional distress. Low scorers tend to be more relaxed, less emotional and less prone to distress. Compared to other people who have taken this test, your score on this dimension (11) is relatively low.

Factor V : Openness (AKA Culture or Intellect)

This trait reflects 'open-mindedness' and interest in culture. High scorers tend to be imaginative, creative, and to seek out cultural and educational experiences. Low scorers are more down-to-earth, less interested in art and more practical in nature. Compared to other people who have taken this test, your score on this dimension (28) is about average.”

“... the evidence for predictive validity of traits is now overwhelming. In virtually every field of psychology, we find the traits correlate with individual differences in behaviour, subjective experience or physiology, often to a practically useful extent.”

### **Reference**

Matthews, Gerald et al. (2009): Personality Traits

## Why smart people can be so stupid?

“... why people who have all the ability one could wish for often don't use it when they need it most and can even lose it (relative to their initially less able peers). The reason for this, ironically, lies in the very fact that many smart people become too invested in being smart. They think of smartness as something that they have and others don't—as something that makes them special and worthy. As a result, they become too focused on being smart and looking smart rather than on challenging themselves, stretching and expanding their skills, becoming smarter. In other words, they focus on the trait of intelligence and on proving that they have it, rather than on the process of learning and growing over time.”  
Sternberg (2002, p. 24)

“Different people have different views of intelligence (...) Some think of it as a fixed trait, with each person having a certain finite amount. (...) Other people, in contrast, view intelligence as a potential that can be developed over time. (...) For them, then, it's not about ranking among some intellectual elite; it's about working hard, taking on challenges, striving to learn — things that will allow them to grow intellectually (...) once people believe that their intelligence is a potential that can be developed, they start focusing, not on the short-term outcomes that might make them look good, but on the effort and strategies that will lead to learning and long-term achievement.”  
Sternberg (2002, p. 25)

“One of the dumbest things people with the fixed view of intelligence do is to sacrifice important learning opportunities when those opportunities contain a risk of revealing ignorance or making errors. Of course, the very idea of learning implies that there is something you don't already know. Yet people who hold the fixed view of intelligence feel they cannot afford to reveal their ignorance and make errors because (...) this can call their intelligence and even their worth into question.”  
Sternberg (2002, p. 29)

“Many people who hold the fixed view of intelligence hold yet another belief that makes them do dumb things. It is the belief that if you're truly intelligent, you don't need effort. (Or that if you need effort, you're not intelligent.)”  
Sternberg (2002, p. 31)

### “Making People Dumb by Telling Them They're Smart

One prevalent view in American culture is that by praising people's abilities or intelligence, one can boost their confidence, increase their motivation, and raise their achievement level. Although this sounds sensible, we have just seen that people who are too focused on their intelligence can be vulnerable to underachievement. Perhaps the act of praising intelligence when people succeed, rather than boosting self-confidence and achievement, might focus them on measuring their intelligence, worrying about its adequacy, avoiding risk, and questioning their intelligence when they fail.”  
Sternberg (2002, p. 36)

“Intelligence praise taught students that intelligence is a fixed quality and that it can be measured from their performance. They quickly became afraid of challenge, they sacrificed learning, and they stopped enjoying effort. Not surprisingly, their skills suffered. In contrast, praise that focused on effort seemed to convey that the task skills were acquirable through effort. These students relished the challenge, wanted to learn more, and sought continued effort. Their task skills, not surprisingly, flourished.

In summary, contrary to popular belief, praising people's intelligence does not fortify them. It might buoy them up temporarily, but it instills beliefs that make them vulnerable. Focusing people on 'process,' such as their effort or their strategies, is what seems to fortify them. That is, it motivates them in a way that allows them to withstand and even thrive on setbacks. These experiments thus encapsulate the theme of this chapter: an undue focus on intelligence can make smart people dumb; a focus on effort can make people smarter.”  
Sternberg (2002, pp. 38-39)

## Reference

Sternberg, Robert J.; ed. (2002): Why Smart People Can Be so Stupid, Yale University Press, New Haven.

## Invisible factors of prosperity

“... how often have you heard a friend ask exasperatedly, ‘Why on earth do mosquitoes exist!’ (...) Yet we now know that adult mosquitoes are important components of the food chains that feed birds, and their larvae are a major ingredient of the diet of many fish. Most people appreciate birds and fish, one way or another, and therefore appreciate (...) the place of mosquitoes in nature. But there is more. Some orchids require mosquitoes for pollination; and research on one mosquito species in particular is revealing a potential breakthrough in the fight against malaria, one of the world’s most disastrous diseases.”

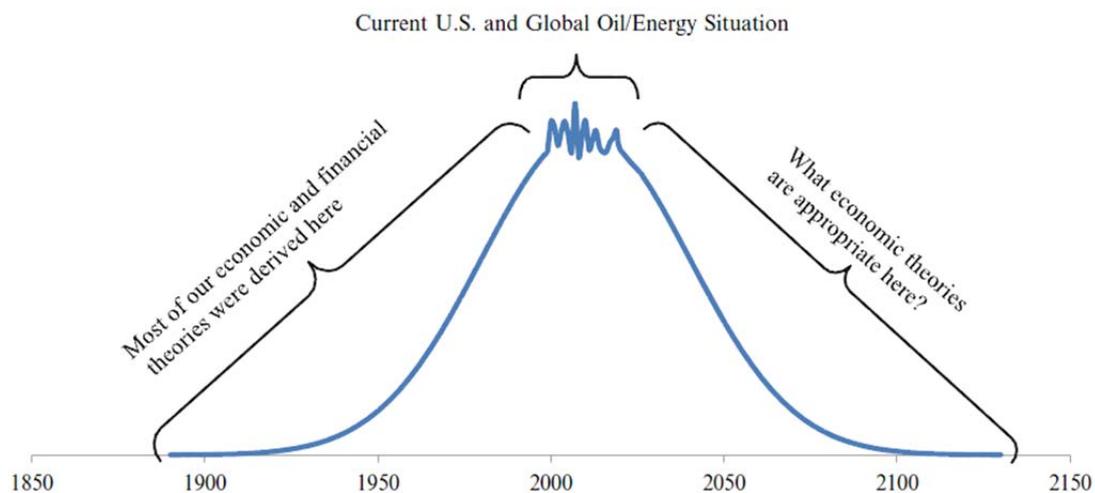
Beattie and Ehrlich (2004, p. ix)

“... our ignorance about the interactions of species in natural ecosystems demonstrates that we humans are not really in control. For example, many organisms regulate the fertility of the soil and the content of the atmosphere, but we have very little knowledge of which species are involved, how many there are, and what precisely they do. This book will also present many examples of the basic proposition that species that appear to be totally insignificant right now are likely in the future to become extremely valuable to medicine, to agriculture, and to a variety of other human needs. The species with which we share the planet are, if nothing else, a vast insurance policy against the problems we will probably face in the years to come.”

Beattie and Ehrlich (2004, p. x)

“One specific example of the link between energy and economic prosperity rarely understood by most economists is that of the role of energy in the dollar value of the products generated by a worker working for 1 hour. Increased labor productivity allowed the employer to pay his or her worker more even while making a larger profit. This increased productivity is normally assigned to technological progress. What is less understood is that labor productivity increased in direct proportion to the amount of energy used per worker hour (...). At that time labor productivity in the United States was two or three times that of a European worker, not because the worker worked harder or was more clever, as commonly assumed, but because he had big machines using two or three times more energy helping him do the job! Again what is often attributed exclusively to technology was in fact equally based on increasing the availability and use of cheap energy, which was much cheaper in the United States than in most other nations.”

Hall and Klitgaard (2012, p. 21)



**Fig. 1.13** Conceptual view of relation of our economic concepts and the Hubbert curve for global total oil use. Most of our economic concepts were derived during a period of increasing energy use. They are having trouble explaining economic events during the present period of peak oil. How will they do during the decline in energy availability?

increase dramatically with early successful invasions of neighbors. But the very success of the expansion/subjugation eventually leads to the collapse of many of these civilizations because of the increasing and eventually unsustainable energy costs of the necessary increase in complexity, that is, the energy cost of maintaining the required food production and distribution systems for the increasingly populous central city from increasingly distant granaries, and the energy cost of armies necessary to enforce discipline on larger and larger subjugated people. This eventually exhausts the treasuries and the real resources of the central authority, and the lands revert to the original inhabitants.”

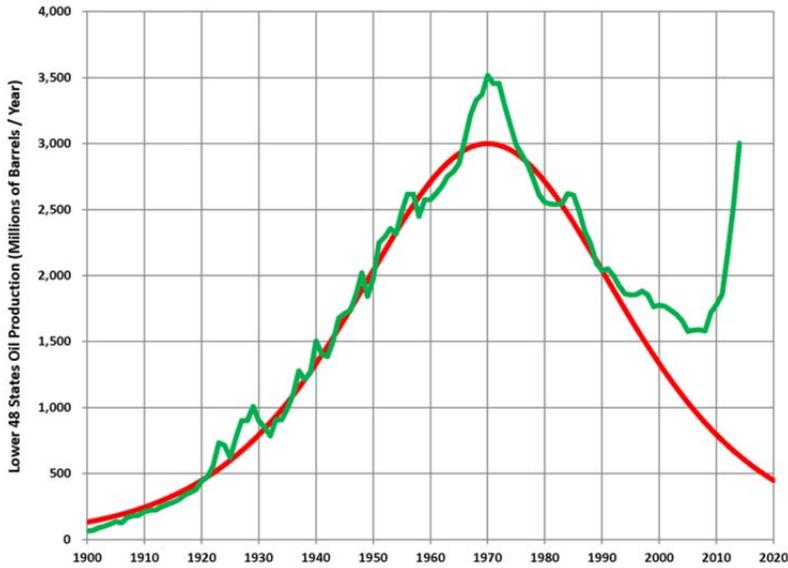
Hall and Klitgaard (2012, p. 66)

“The (M King) Hubbert peak theory says that for any given geographical area, from an individual oil-producing region to the planet as a whole, the rate of petroleum production tends to follow a bell-shaped curve. It is one of the primary theories on peak oil.”

Hall and Klitgaard (2012, p. 37)

### Fall of civilizations

“The pattern that Tainter has developed seems so very powerful: that as a civilization generates some successful means of generating wealth (i.e., surplus energy) and is able to feed its people and keep its enemies at bay, the power of the central city and of the chief can increase dramatically. Wealth and resource flows to the center



[https://en.wikipedia.org/wiki/Hubbert\\_peak\\_theory](https://en.wikipedia.org/wiki/Hubbert_peak_theory)

### References

- Beattie, Andrew; Paul R. Ehrlich (2004): *Wild Solutions: How Biodiversity Is Money in the Bank*, second edition, Yale University Press, New Haven, Connecticut.
- Hall, Charles A. S.; Kent A. Klitgaard (2012): *Energy and the Wealth of Nations: Understanding the Biophysical Economy*, Springer, New York.

## Origins of agriculture

### Technological progress is reversible

“It is widely believed that the primary domesticated crops of the Neolithic—namely, einkorn wheat, emmer wheat, barley, lentil, pea, chick pea, and flax—appeared initially in a core area from which they spread throughout the Middle East (...). Recent archaeobotanical data, however, indicate that predomestication cultivation of some of these species was carried out autonomously in very early sites of the Near Eastern PPNA (Pre-Pottery Neolithic A; ~11,500 to 10,300 calendar years before present). Moreover, the data also suggest that some of these crops did not develop into fully domesticated species because their cultivation was abandoned by the local populations.

Human domestication of plants can be divided into three stages: “gathering,” in which people gathered annual plants from wild stands; “cultivation,” in which wild plant genotypes were systematically sown in fields of choice; and “domestication,” in which mutant plants with desirable characteristics were raised. Cultivation is the essential stage, as the repetitive cycle of sowing, collecting, and sowing of wild plants gives rise to genotype accumulation that leads to domestication.”

Weiss et al (2006, p. 1608)

### Transitions between technological levels are not automatic / Agriculture was an unintended consequence of a long-lived process or processes

“... the initiation of agriculture in one place does not imply that the successfully grown plants would be continuously cultivated (...). Consequently, the location of the germ plasm of wild-plant founder stocks genetically associated with a particular fully domesticated plant are, in reality, just the stocks that led ultimately to the domesticated plant.”

Weiss et al (2006, p. 1608)

“Increasing archaeobotanical evidence indicates that the beginning of agriculture, as well as of crop domestication, was not necessarily a single event but a process of trial and error. For oats and rye, for example, the beginnings of cultivation and subsequent domestication are separated by millennia and great distances. For the Near East, current data suggest that at least three or four species can be considered as early pioneer crops, which predate the seven wellrecognized species of founder crops.”

Weiss et al (2006, p. 1610)

“In the PPNA, Near Eastern human groups in two regions already possessed and applied agricultural knowledge: In the north, they planted lentil and perhaps rye; and in the south, they raised barley and probably oat, together with imported lentil. Although this early barley and lentil was eventually domesticated in the region, two of the crops raised or gathered there—rye and oats— were abandoned. The transition to food production in eastern North America shows a notable similarity to the Near East. (...) both in the Near East and early eastern North America, the first stage of agriculture was cultivating annual wild plants; the second stage was cultivating both wild types and domesticants; and the last stage was the cultivation of domesticants alone.”

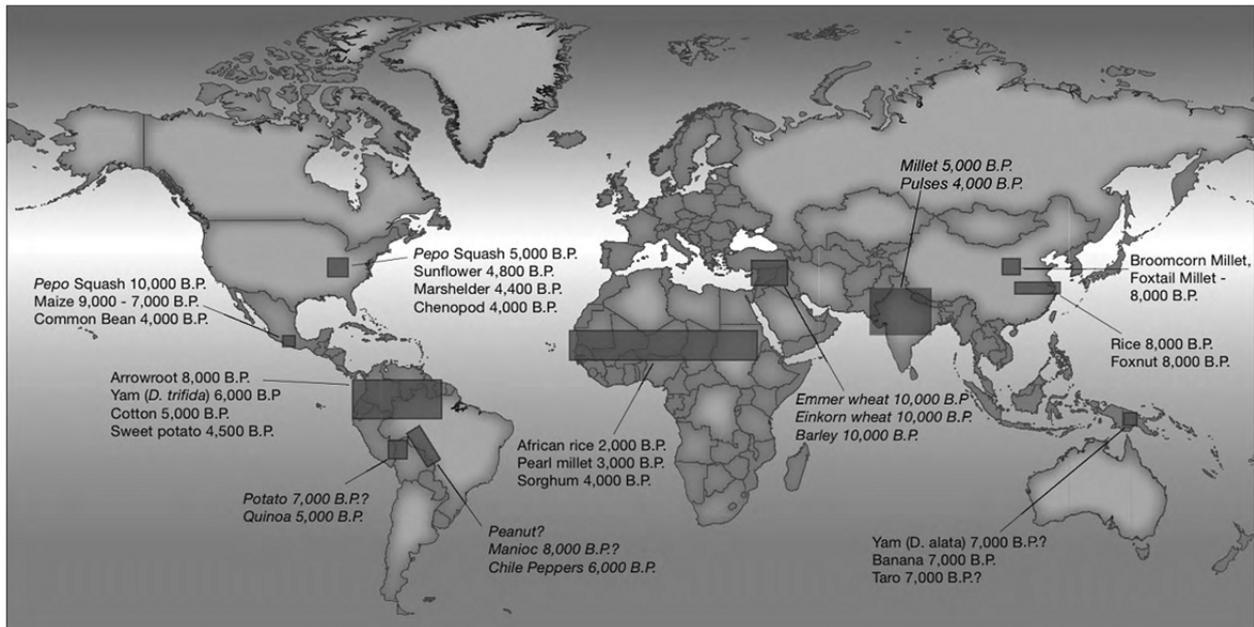
Weiss et al (2006, p. 1610)

“Causes that have been proposed for the transition from foraging to farming: aliens; big men; broad spectrum adaptation; circumscription; climatic change; competition; desertification; diffusion; domesticability; energetics; familiarity; fat intake; feasting; geniuses; hormones; intelligence; kitchen gardening; land ownership; multicausal; marginal environments; natural habitat; natural selection; nutritional stress; oases; plant migration; population growth; population pressure; random genetic kicks; resource concentration; resource pressure; rich environments; rituals; scheduling conflicts; sedentism; storage; technological innovation; water access; xenophobia; zoological diversity.”

Barker (2006, p. 383)

“The transition from foraging to farming was the most profound revolution in human history, albeit one whose origins in many respects go back to the beginnings of our species and whose aftershocks have continued in some parts of the world almost to the modern era. Its legacy today is the mechanized and industrialized systems of farming that sustain extraordinary densities of population and a global economy that together threaten the sustainability of our planet on a scale unmatched at any time in the past.”

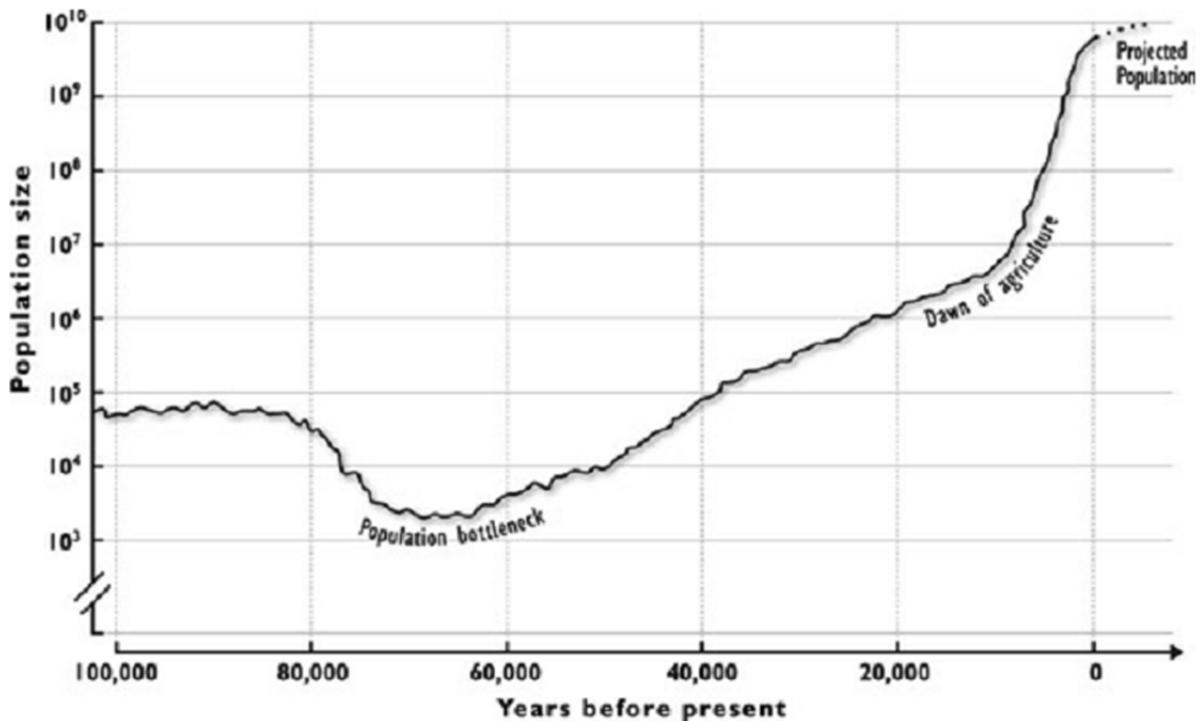
Barker (2006, p. 414)



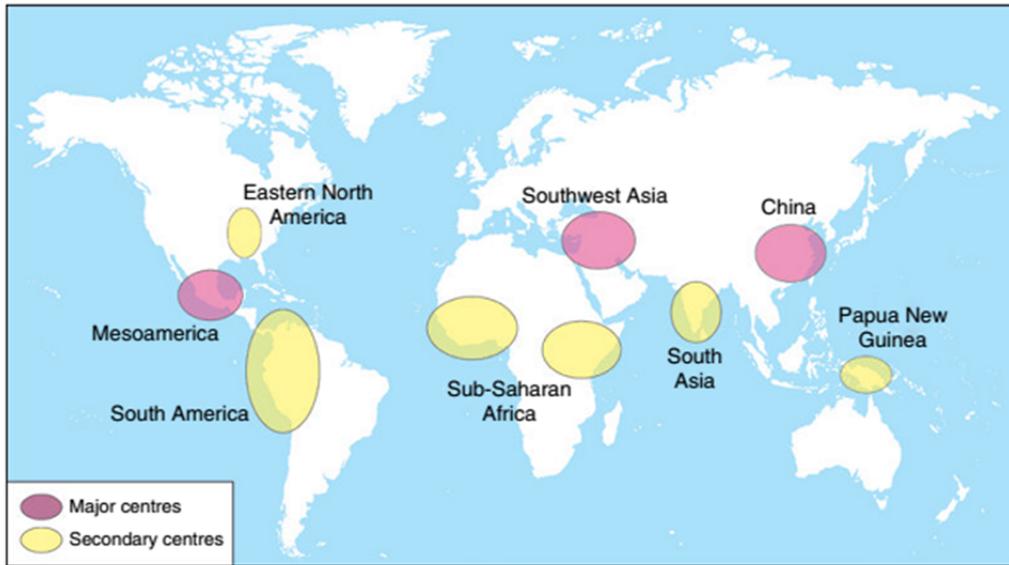
Major centers of domestication and dates for earliest plants and animals  
 Douglas and Bar-Yosef (2011, p. S170)

“human population may have averaged no more than a mere two thousand people around 70,000 years ago (...) Our species has been on an accelerating growth curve since a round 60,000 years ago.”

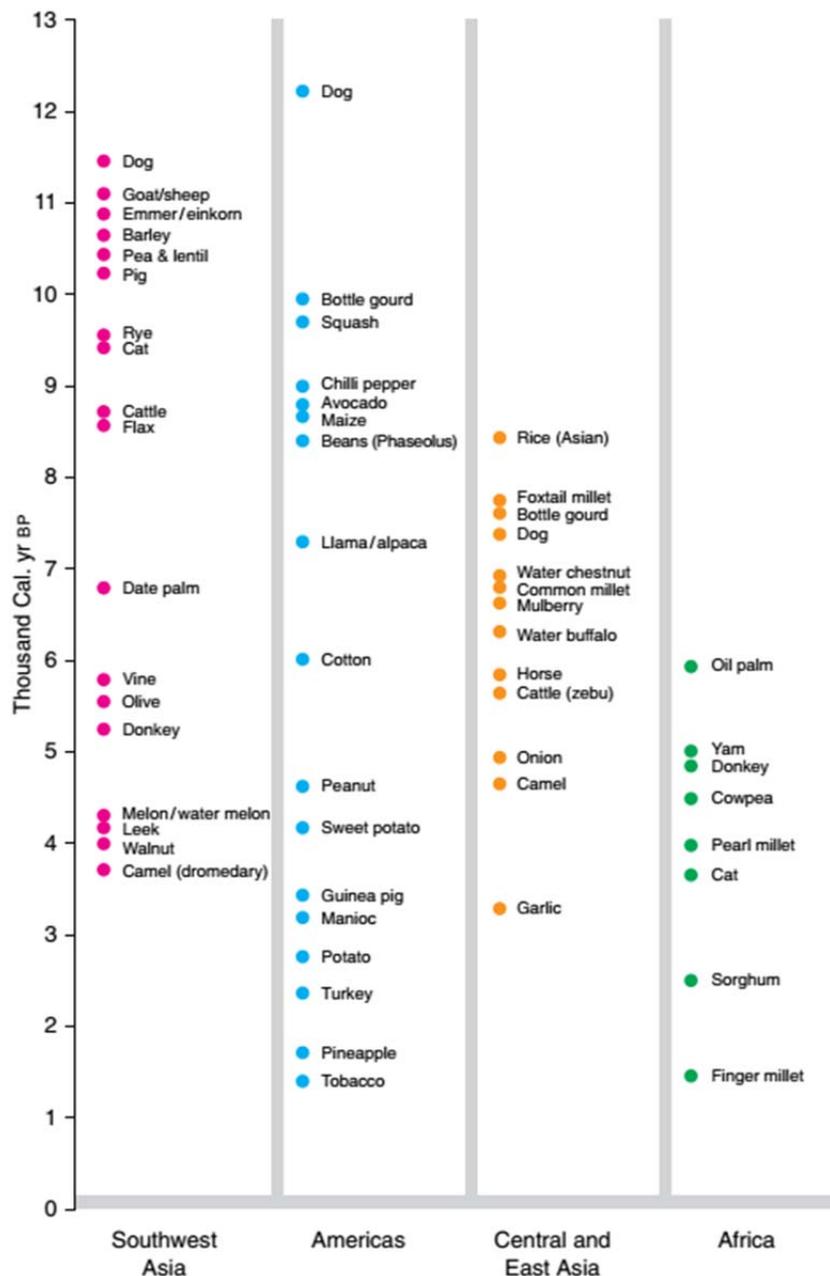
Wells



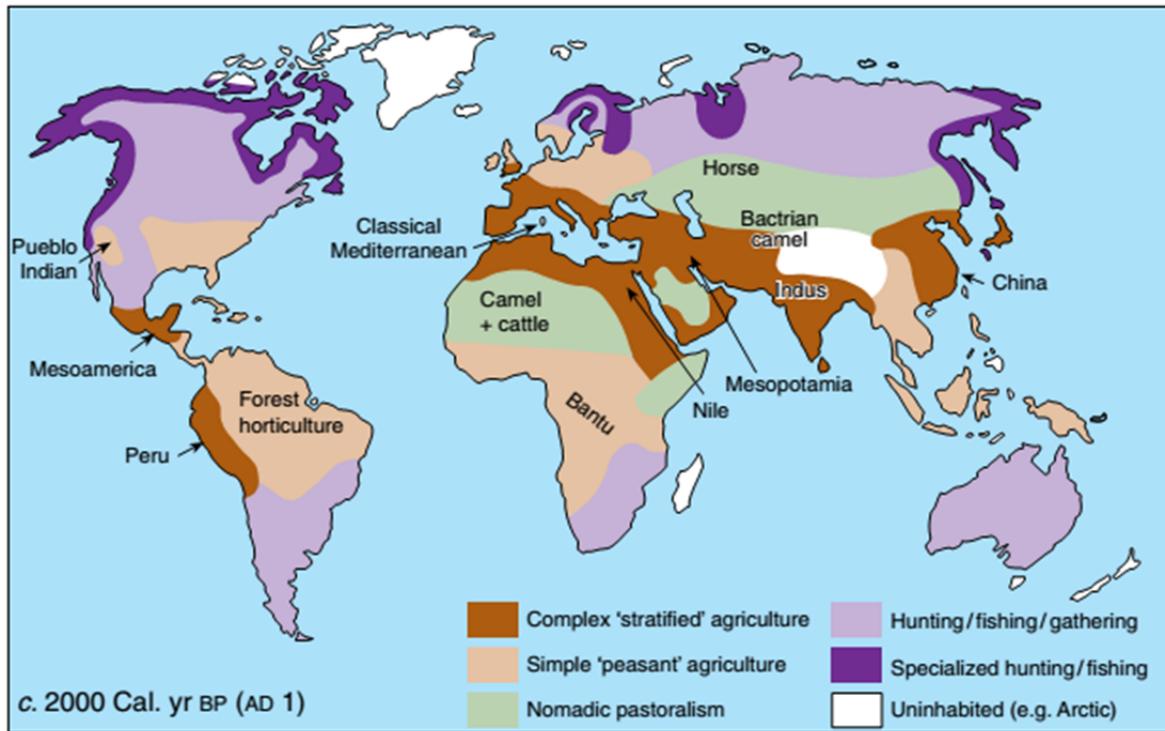
“One of the great myths surrounding the development of human culture over the past 10,000 years is that things got progressively better as we moved from our hunter gatherer existence to the sublimely elevated state in which we live today (...) The explosion in the size of the human population after 10,000 years ago is assumed to be merely the numerical manifestation of the positive impact of growing our own food, the benefits of the new lifestyle writ in the expanding number of happy farmers. In fact, nothing could be further from the truth.”



World centres of plant and animal domestication, Roberts (2014, p. 179)



Recorded first appearances of individual domesticates in different regions during the holocene, Roberts (2014, p. 190)



Global cultural developments during the later holocene, Roberts (2014, p. 218)

**References**

Barker, Graeme (2006): *The Agricultural Revolution in Prehistory: Why did Foragers become Farmers?*, Oxford University Press, New York.

Weiss, Ehud; Mordechai E. Kislev; Anat Hartmann (2006): *Autonomous Cultivation Before Domestication*, *Science* 312, 1608-1610.

Price, T. Douglas; Ofer Bar-Yosef (2011): *The Origins of Agriculture: New Data, New Ideas*. *An Introduction to Supplement 4, Current Anthropology* 52, Supplement 4, S163-S174.

Roberts, Neil (2014): *The Holocene: An Environmental History*, 3rd edition, Wiley-Blackwell, Oxford, UK.

Wells, Spencer: *Pandora's Seed: The Unforeseen Cost of Civilization*

## **Bernal's ladder: false/irrelevant/not original/well-know**

“The physicist Desmond Bernal described the sequence of responses from fellow scientists, as an idea gradually ascends from rejection to acceptance:

1. It can't be right.
2. It might be right but it's not important.
3. It might be important but it's not original.
4. It's what I always thought myself.”

Calder (2005, p. 35)

### **Reference**

Calder, Nigel (2005): Magic universe: A grand tour of modern science

## The Needham problem (puzzle)

### Definition

Why modern science originated only in Europe

“The greatest enigma in the history of technology is the failure of China to sustain its technological supremacy. In the centuries before 1400, the Chinese developed an amazing technological momentum, and moved, as far as these matters can be measured, at a rate as fast as or faster than Europe.”

209

### Exceptionality of the scientific revolution?

“The enlightenment—the fact that useful knowledge became more diffuse and accessible in the years between 1720 and 1780—and the scientific revolution were not British phenomena, they were European ones. Asia, despite its enormous scientific achievements, never attained anything like it.”

Mokyr (2000, p. 508)

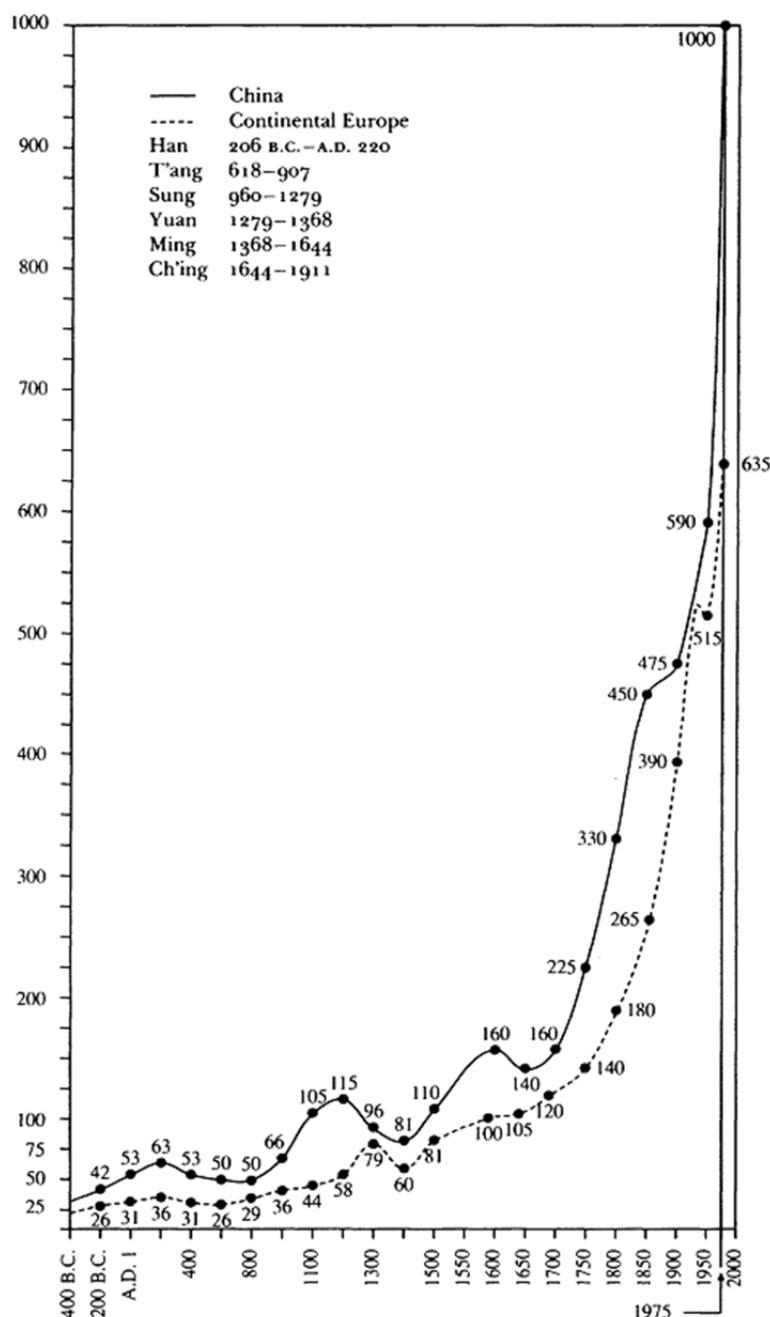


FIG. 1.—Population in China (in millions; A. Feuerwerker, “Chinese Economic History in Comparative Perspective,” in *Heritage of China*, ed. Paul S. Ropp [Berkeley and Los Angeles: University of California Press, 1990], p. 227).

“The reason that China failed to have a scientific revolution I have attributed here to the contents of civil service examinations and the criteria of promotion, which distracted the attention of intellectuals away from investing the human capital necessary for modern scientific research. Therefore, the probability of making a transition from primitive science to modern science was reduced.”  
286

“... if this large population is ill equipped with the acquired human capital necessary for undertaking modern scientific research and experiment, the likelihood that the economy will contribute to modern technological invention and scientific discovery is small. For a developing country in modern times, many technologies can certainly be imported from developed countries at a much lower cost than the cost of inventing them independently. However, many empirical studies have found that the success or failure of technology transfers crucially depends on the domestic ability to follow up with adaptive innovations on the imported technology, which in turn depends on domestic scientific research capacity. Therefore, in modern times a large population is no longer an endowment for economic development. More important than the size of the population is education with an emphasis on modern curriculum.”  
286

“China had two chances: first, to generate a continuing, self-sustaining process of scientific and technological advance on the basis of its indigenous traditions and achievements; and second, to learn from European science and technology once the foreign “barbarians” entered the Chinese domain in the sixteenth century. China failed both times.”  
Landes (2006, p. 5)

“In general, one can establish a long list of instances of Chinese priority: the wheelbarrow, the stirrup, the rigid horse collar (to prevent choking), the compass, paper, printing, gunpowder, porcelain. (But not the horse-shoe, which implies that the Chinese did not make use of the horse for transport.) The mystery lies in the failure of China to realize the potential of some of the most important of these inventions. (...) Chinese industrial history offers a number of examples of technological regression and oblivion.”  
Landes (2006, pp. 5-6)

“First, China lacked a free market and institutionalized property rights. The Chinese state was always stepping in to interfere with private enterprise (...) A second reason why China did not realize the economic potential of its scientific expertise involved the larger values of the society. The great Hungarian-German-French sinologist, Etienne Balazs (...), saw China's abortive technology as part of a larger pattern of totalitarian control.  
Landes (2006, pp. 6-7)

“the reason the Chinese did not develop based on their scientific knowledge is that no one was trying. Why try? (...) In all this, the contrast with Europe was marked. Where fragmentation and national rivalries compelled European rulers to pay heed to their subjects, to recognize their rights and cultivate the sources of wealth, the rulers of China had a free hand.”  
Landes (2006, p. 8)

## References

- Landes, David S. (2006): “Why Europe and the West? Why not China?”, *Journal of Economic Perspectives* 20(2), 3-22.  
Mokyr, Joel (2000): “The industrial revolution and the Netherlands: Why did it not happen?”, *The Economist* 148(4), 503-520.  
Why the Industrial Revolution Did Not Originate in China (1985)  
The Needham Puzzle: Why the Industrial Revolution Did Not Originate in China

## Fundamental puzzles in economic history and economic development

“... fundamental puzzles in economic history/development—puzzles that go to the heart of the nature of economic change. They can be broadly classified under two general headings: (1) how to account for the uneven and erratic pattern of both historical change and contemporary development, and (2) how to model this process of change and development.”  
North (1997, p. 223)

“In general, growth has been much more exceptional than stagnation or decline. Modern economic growth appears to have begun perhaps four hundred years ago but been confined to a small part of the earth for most of that time. Widespread growth is a recent phenomenon mostly dating since World War II.”  
North (1997, p. 224)

“The rational choice paradigm assumes that people know what is in their self interest and act accordingly, or at the very least that competition will weed out those who make incorrect choices and reward those who make correct choices. But it is impossible to reconcile this argument with the historical and contemporary record. Growth theory as it has evolved from neoclassical theory is equally unhelpful in explaining this historical and contemporary record.”  
North (1997, p. 224)

the growth theory stemming from neoclassical economics, old or new, suggests not only ignorance of the empirical evidence, historical or contemporary, but a failure to recognize that incentives matter; surely a remarkable position for economists whose theory is built on incentives. It is the incentive structure embedded in the institutional/organizational structure of economies that has the key to unravelling the puzzle. But that is still a deeper puzzle. Why don't economies that have institutional frameworks that are inhospitable to economic growth simply adopt the frameworks of the successful economies? They do, or at least they try to. There is a market economy as a ubiquitous characteristic of third world and transition economies. But look at the results. They vary enormously, from China and the Czech Republic, which so far are successful; to the republic of the former Soviet Union, which so far shows few signs of success; to sub-Saharan Africa, which remains a basket case.  
North (1997, p. 224)

To make sense out of the historical and contemporary evidence, we must rethink the whole process of economic growth. Current theory stems from the development of national income and growth accounting literature and explores the superficial aspects of economic growth—technology or human or physical capital—rather than the structure of incentives and disincentives that make up the institutional framework of an economy and polity.  
North (1997, p. 224)

Institutions provide the structure that humans impose on human interaction in order to reduce uncertainty. (...) Institutions are the rules of the game—both formal rules and informal constraints (conventions, norms of behavior, and self-imposed codes of conduct)—and their enforcement characteristics. Together they define the way the game is played. Organizations are the players. They are made up of groups of individuals held together by some common objectives.  
North (1997, p. 225)

“... five propositions that, I believe, underlie institutional change (...)  
PROPOSITION 1: The continuous interaction between institutions and organizations in the economic setting of scarcity and, hence, competition is the key to institutional change.  
PROPOSITION 2: Competition forces organizations continually to invest in new skills and knowledge to survive. The kind of skills and knowledge individuals and their organizations acquire will shape evolving perceptions about opportunities and, hence, choices that will incrementally alter institutions.  
PROPOSITION 3: The institutional framework provides the incentive structure that dictates the kinds of skills and knowledge perceived to have the maximum payoff.  
PROPOSITION 4: Perceptions are derived from the mental constructs of the players.  
PROPOSITION 5: The economies of scope, complementarities, and network externalities of an institutional matrix make institutional change overwhelmingly incremental and path dependent.”  
North (1997, p. 225-226)

*Alternative view: only organizations exist; institutions are just impositions of some organizations on other organizations. The essence of 'criminal' or 'antisocial' behaviour is the refusal to accept those impositions.*

**Reference**

North, Douglass C. (1997): Some Fundamental Puzzles in Economic History/Development, in W. Brian Arthur; Steven N. Durlauf; David A. Lane; eds.: The Economy as an Evolving Complex System II, SFI Studies in the Sciences of Complexity, Vol.XXVII, Addison-Wesley, pp. 223-237.

## Cardwell's Law

### Definition

Named by Mokyr (2000, p. 510), states that nations that are technologically creative are so only for a short time.

### The “real” Industrial Revolution was the second one, starting in the 1860s.

“...the really significant event is not the early inventions of the 1760s and 1770s but their continued development after 1820, in sharp contrast with earlier episodes of technological breakthroughs.”

Mokyr (2000, p. 506)

“The Industrial Revolution changed the economic system from one dominated by negative feedback mechanisms to one of predominantly positive feedback, where growth beget more growth.”

Mokyr (2000, p. 504)

### Reference

Mokyr, Joel (2000): “The industrial revolution and the Netherlands: Why did it not happen?”, *De Economist* 148(4), 503-520.

## Capitalism

“... Capitalism was created inductively by a small number of political competitors from among a population of more than three hundred political entities in Western Europe circa 1400.”

Scott (2011, p. 597)

“Capitalism is an indirect system of governance for economic relationships.”

Scott (2011, p. 27)

“Friedman conceives of capitalism as a one-level system for achieving economic coordination (i.e., economic markets), North conceives of it as a two-level system (i.e., economic markets embedded in institutions), and I conceive of it as a three-level system (i.e., economic markets embedded in institutions governed by a political authority accountable to political markets).”

Scott (2011, p. 37)

“... capitalism is neither a one-level system comprised of economic markets nor a two-level system of those markets and their supporting institutions, but instead a three-level system of governance comprised of those two subsystems under the auspices of one political authority (...) capitalism is not a natural system; rather, it is a socially constructed system of governance for economic relationships among people and property.”

Scott (2011, p. 587)

“Capitalism is based upon indirect governance and not “free markets” (...). Whereas the markets of capitalism are typically described as “free markets,” the freedoms of economic actors in those markets are always conditional upon their obedience to a set of laws and regulations. Truly free and unregulated markets are not a recipe for organized capitalism; instead they are a recipe for instability and even chaos, as the recent global financial crisis has demonstrated.”

Scott (2011, p. 593-594)

“... the major characteristics of capitalism: (1) Capitalism is an indirect system of governance; (2) capitalism is analogous to organized sports; (3) capitalism is comprised of three levels—markets, institutions, and political authority; (4) the third level of political authority underscores the role of visible human agency, not just that of invisible market forces, in capitalism; (5) the political authority has the administrative opportunity and in many cases the responsibility to shape the capitalist system to favor certain interest groups over others, as well as the entrepreneurial responsibility to modernize the capitalist system over time; (6) capitalism is a system of governance not only for private goods but also for public or “common” goods, where some of the most important of those common goods are the market frameworks themselves, and political authority, not market forces, is essential for governing the latter; (7) political authority inevitably shapes capitalism according to a strategy, no matter how implicit or imperfect that strategy might be; and (8) political and economic markets determine the nature of political authority, such that the political system of governance and the economic system (i.e., capitalism itself) are not only interdependent but also a theater of competition in which economic and political actors compete with each other for power.”

Scott (2011, p. 28)

“In sports, as indeed in capitalism, the level of the political authority encompasses two distinct roles: one administrative, in maintaining the existing system with its approved teams, rules, and existing organization for the monitoring and enforcement of the rules, and the second entrepreneurial, in mobilizing power to win the needed votes in the legislature in order to admit new teams, change the locations or timing of competition, change the rules and regulations, and/or change the distribution of revenues.”

Scott (2011, p. 50)

“While the institutions of organized sports are designed to ensure a level playing field, those of capitalism are not. To explain: Since economies of scale will enhance productivity, it follows that capitalism generally permits the accumulation of advantages, subject to certain exceptions and certain limits on acceptable behavior.”

Scott (2011, p. 59)

“Capitalism is three-level system of indirect governance for economic relationships; it is a system that is political and administrative as well as economic. Organized markets cannot exist without a set of institutional foundations that establish various rights and responsibilities that are attributed to notions of property, and these foundations are created, legitimated, regulated, and periodically modernized under the auspices of a political authority such as a state. It is government and its agents, and not the private economic actors, who create and ultimately enforce the laws and regulations that guide production and trade.”

Scott (2011, p. 63)

“The political power of the wealthy merchant class, an urban-based bourgeoisie, was a sine qua non for the creation of a capitalist system.”

Mielants (2007, p. 78)

### Capitalism and development

“... the fact that this application of state power was directed not by the rising class of industrialists but by the ruling landed oligarchy testifies to the fact that the Industrial Revolution in Britain grew up out of and continued to be shaped by the social property relations of agrarian capitalism.”

Žmolek (2013, p. 839)

“The great strength of capitalism lies in its capacity to facilitate the development and adaptation of new technologies, including the possibility of higher levels of resource mobilization to achieve more rapid acquisition and adaptation of new technologies in developing countries.”

Scott (2011, p. 65)

### Capitalism and inequality

“Since capitalism is designed to promote productivity, it can be expected to promote inequalities of income and wealth, and first movers in a technology may keep their advantages for decades.”

Scott (2011, p. 59)

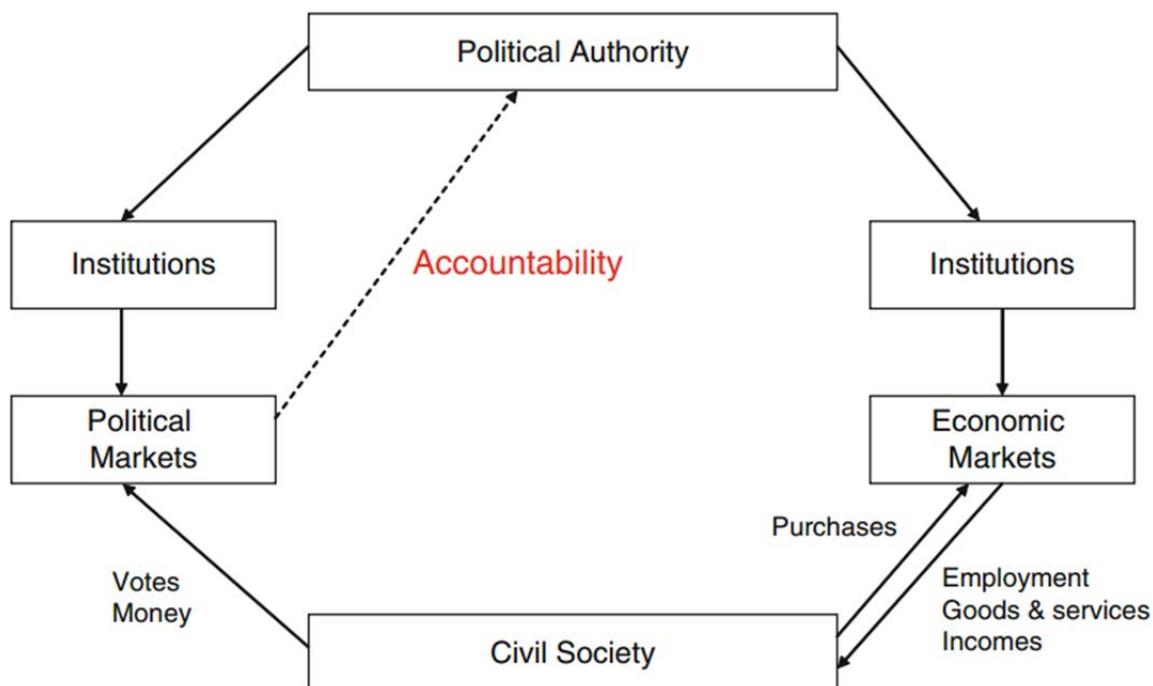
### Capitalism and democracy

“Capitalism and democracy co-exist as the prevailing systems of governance the world over and they inevitably interact with each other and transform each other. However, with few exceptions they did not emerge simultaneously and their historical relationship is complex and far from obvious. Capitalism generally came first, often by centuries, and its decentralized system of decision-making appears to have been a necessary precondition for the successful establishment of democracy. The rise of capitalism thus becomes of pivotal importance not only as a new and promising form of economic governance, but also as a precondition for the rise of large-scale or representative democracy (...) despite their differences in origins and function, both capitalism and democracy were propelled into existence by political transformations and not just economic growth.”

Scott (2011, p. 11)

“Capitalism requires the rule of law; it does not require democracy.”

Scott (2011, p. 603)



“Capitalism and democracy are interdependent systems of governance.”

Scott (2011, p. 11)

## References

- Mielants, Eric H. (2007): *The Origins of Capitalism and the "Rise of the West"*, Temple University Press, Philadelphia.
- Scott, Bruce R. (2011): *Capitalism. Its Origins and Evolution as a System of Governance*, Springer, New York.
- Žmolek, Michael Andrew (2013): *Rethinking the Industrial Revolution. Five Centuries of Transition from Agrarian to Industrial Capitalism in England*, BRILL, Leiden, The Netherlands.

## The fall of the Soviet Union

“Adaptive efficiency entails an institutional structure that in the face of the ubiquitous uncertainties of a non-ergodic world will flexibly try various alternatives to deal with novel problems that continue to emerge over time. In turn this institutional structure entails a belief structure that will encourage and permit experimentation and equally will wipe out failures. The Soviet Union represented the very antithesis of such an approach.”

North (2005, p. 154)

“The United States won one of the longest and most potentially destructive wars in human history -the Cold War against the Soviet Union- without firing a shot. The battlefield was the economy. Russian productivity was so low that the Soviet Union could not match the military capabilities of the United States, and the attempt to reform its economy led to the collapse of the associated political system.”

Kay (2004, p. 9)

### References

Kay, John (2004): Culture and Prosperity. The Truth about Markets: Why some Nations are Rich but most Remain Poor, Harper Business, New York.

North, Douglass Cecil (2005): Understanding the Process of Economic Change, Princeton University Press, Princeton, New Jersey.

## The great experiment

### Definition

The great experiment is the systematic cooperative division of labor among genetically unrelated individuals

“Our everyday life is much stranger than we imagine, and rests on fragile foundations. This is the startling message of the evolutionary history of humankind. Our teeming, industrialized, networked existence is not some gradual and inevitable outcome of human development over millions of years. Instead we owe it to an extraordinary experiment launched a mere ten thousand years ago. No one could have predicted this experiment from observing the course of our previous evolution, but it would forever change the character of life on our planet. For around that time, after the end of the last ice age, one of the most aggressive and elusive bandit species in the entire animal kingdom began to settle down.”

Seabright (2010, p. 3)

“Homo sapiens sapiens is the only animal that engages in elaborate tasksharing—the division of labor as it is sometimes known—between genetically unrelated members of the same species. It is a phenomenon as remarkable and uniquely human as language itself. Most human beings now obtain a large share of the provision for their daily lives from others to whom they are not related by blood or marriage. Even in poor rural societies people depend significantly on nonrelatives for food, clothing, medicine, protection, and shelter. In cities, most of these nonrelatives crucial to our survival are complete strangers. Nature knows no other examples of such complex mutual dependence among strangers.”

Seabright (2010, p. 4)

“... why the division of labor is such a challenge for us to explain. It looks at the way in which even some of the simplest activities of modern society depend upon intricate webs of international cooperation that function without anyone’s being in overall charge. On the contrary, they work through eliciting a single-mindedness from their participants—a tunnel vision—that is hardly compatible with a clear and nonpartisan vision of the priorities of society as a whole.”

Seabright (2010, p. 7)

degree of spontaneous coordination displayed in human societies -> This coordination comes about simply because of a **willingness of individuals to cooperate with strangers** in a multitude of small but collectively very significant ways.

what makes such cooperation possible, given the psychology we have inherited from our hunter-gatherer ancestors. The answer consists of institutions—sets of rules for social behavior, some formal, many informal—that build on the instincts of the shy, murderous ape in ways that make life among strangers not only survivable but attractive, potentially even luxurious. These rules of behavior have made it possible for us to deal with strangers by persuading us, in effect, to treat them as honorary friends. Some of the institutions that make this possible have been consciously and coherently designed, but many have grown by experiment or as the by-product of attempts to achieve something quite different. Nobody can claim they are the “best” institutions that human beings could ever devise. They are simply the ones that happen to have been tried...

### Reference

Seabright, Paul (2010): The Company of Strangers: A Natural History of Economic Life

### Are the big phenomena that have taken place accidents or necessary events?

Emergence of matter

Emergence of complex molecules

Emergence of life

Emergence of complex life

Emergence of sentient life

Emergence of intelligent life

Emergence of civilization

Emergence of a planet when all the above can arise and persist

## Another great experiment

“We believe that life in the form of microbes or their equivalents is very common in the universe, perhaps more common than even Drake and Sagan envisioned. However, complex life—animals and higher plants—is likely to be far more rare than is commonly assumed. We combine these two predictions of the commonness of simple life and the rarity of complex life into what we will call the Rare Earth Hypothesis.”

Ward and Brownlee (2000, p. xviii)

<b>Right distance from star</b>	<b>Right mass of star</b>	<b>Stable planetary orbits</b>
Habitat for complex life. Liquid water near surface. Far enough to avoid tidal lock.	Long enough lifetime. Not too much ultraviolet.	Giant planets do not create orbital chaos.
<b>Right planetary mass</b>	<b>Jupiter-like neighbor</b>	<b>A Mars</b>
Retain atmosphere and ocean. Enough heat for plate tectonics. Solid/molten core.	Clear out comets and asteroids. Not too close, not too far.	Small neighbor as possible life source to seed Earth-like planet, if needed.
<b>Plate tectonics</b>	<b>Ocean</b>	<b>Large Moon</b>
CO <sub>2</sub> -silicate thermostat. Build up land mass. Enhance biotic diversity. Enable magnetic field.	Not too much. Not too little.	Right distance. Stabilizes tilt.
<b>The right tilt</b>	<b>Giant impacts</b>	<b>The right amount of carbon</b>
Seasons not too severe.	Few giant impacts. No global sterilizing impacts after an initial period.	Enough for life. Not enough for Runaway Greenhouse.
<b>Atmospheric properties</b>	<b>Biological evolution</b>	<b>Evolution of oxygen</b>
Maintenance of adequate temperature, composition and pressure for plants and animals.	Successful evolutionary pathway to complex plants and animals.	Invention of photosynthesis. Not too much or too little. Evolves at the right time.
<b>Right kind of galaxy</b>	<b>Right position in galaxy</b>	<b>Wild Cards</b>
Enough heavy elements. Not small, elliptical, or irregular.	Not in center, edge or halo.	Snowball Earth. Cambrian explosion. Inertial interchange event.

### Rare Earth factors

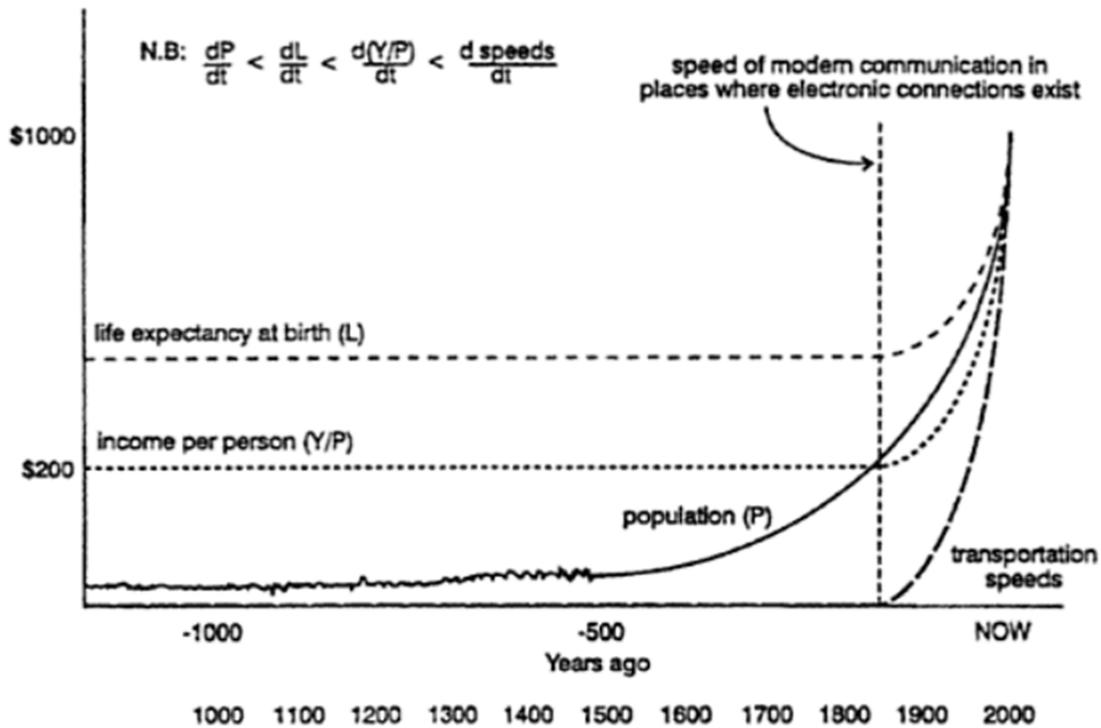
Ward and Brownlee (2000, pp. xxxi-xxxii)

## Reference

Ward, Peter D.; Donald Brownlee (2000): Why complex life is uncommon in the universe-

## People and technology

"The total quantity of humanity (and the nexus of human numbers with technology) has been the main driving force"



Measures of progress – Simon p.3

## Why people believe weird things

“... two types of thinking errors: Type 1 Error: believing a falsehood and Type 2 Error: rejecting a truth. Since these errors will not necessarily get us killed, they persist. The Belief Engine has evolved as a mechanism for helping us to survive because in addition to committing Type 1 and Type 2 Errors, we also commit what we might call a Type 1 Hit: not believing a falsehood and a Type 2 Hit: believing a truth.”

“... a spandrel is "the tapering triangular spaces formed by the intersection of two rounded arches at right angle." This leftover space in medieval churches is filled with elaborate, beautiful designs so purposeful looking "that we are tempted to view it as the starting point of any analysis, as the cause in some sense of the surrounding architecture. But this would invert the proper path of analysis." To ask "what is the purpose of the spandrel" is to ask the wrong question. It would be like asking "why do males have nipples?" The correct question is "why do females have nipples?" The answer is that females need them to nurture their babies, and males and females are built on the same architectural frame. It was simply easier for nature to construct males with worthless nipples rather than reconfigure the underlying genetic architecture.”

“We make Type 1 and 2 Errors because we need to make Type 1 and 2 Hits. We have magical thinking and superstitions because we need critical thinking and pattern-finding. The two cannot be separated. Magical thinking is a necessary by-product of the evolved mechanism of causal thinking.”

### Reference

Shermer, Michael (2002): Why people believe weird things

## Development and industrialization

### **Does development require industrialization?**

“The historical record of all developed countries –going back at least 500 years– confirms this policy [industrialization] as a mandatory passage point to development.”

Reinert (2011, p. 157)

“As one eighteenth-century economist put it, diversifying the economy away from dependence on agriculture cured the main ills of mankind: unemployment, superstition, poverty, and shortage of foreign exchange. Today’s failing states in Africa all have one thing in common: a minute industrial sector.”

Reinert (2011, p. 158)

“From the Enlightenment through to twentieth-century fascism, Nazism, Stalinism, and Western democracies, all development strategies were based on industrialization. When the Allies wanted to punish Germany after the Second World War the cruellest plan they could come up with was forced deindustrialization: the Morgenthau Plan. This plan was, however, so effective in producing mass poverty that it only lasted two years and was replaced by the Marshall Plan, a plan for re-industrialization.”

Reinert (2011, p. 158)

### **Institutions cannot be considered regardless of the context (economic structure) in which they are implanted or that creates them**

“Institutions are a product of specific social and economic structures. Such structures are a key factor to explain democracy (good governance) and prosperity.”

Reinert (2011, p. 158)

### **Reference**

Reinert (2011)

## **'Morris theorem' and the paradox of development**

### **'Morris theorem'**

"Change is caused by lazy, greedy, frightened people looking for easier, more profitable, and safer ways to do things. And they rarely know what they're doing."

"... change is caused by lazy, greedy, frightened people (who rarely know what they're doing) looking for easier, more profitable, and safer ways to do things (...) none of the great transformations in social development —the origins of agriculture, the rise of cities and states, the creation of different kinds of empires, the industrial revolution— was a matter of mere tinkering; each was the result of desperate times calling for desperate measures."

Morris (2010, p. 559)

### **The paradox of development**

"Rising social development generates the very forces that undermine further social development. I call this the paradox of development. Success creates new problems; solving them creates still newer problems. Life, as they say, is a vale of tears. The paradox of development is constantly at work, confronting people with hard choices. Often people fail to rise to its challenges, and social development stagnates or even declines. At other times, though, sloth, fear, and greed combine to push some people to take risks, innovating to change the rules of the game. If at least a few of them succeed and if most people then adopt the successful innovations, a society might push through the resource bottleneck and social development will keep rising."

Morris (2010, p. 560)

"history is (...) a single grand and relentless process of adaptations to the world that always generate new problems that call for further adaptations (...) I have called this process the paradox of development: rising social development creates the very forces that undermine it. People confront and solve such paradoxes every day, but once in a while the paradox creates tough ceilings that will yield only to truly transformative change (...) as a society approaches one of these ceilings a kind of race begins between development and collapse. Societies rarely -perhaps never- simply get stuck at a ceiling and stagnate, their social development unchanging for centuries. Rather, if they do not figure out how to smash the ceiling, their problems spiral out of control (... and...) will drive development down..."

Morris (2010, p. 560)

### **Reference**

Morris, Ian (2010): Why the West rules —for Now. The Patterns of History and What They Reveal about the Future, Profile Books, London.

## State, elites, and development

### State

“Contrary to those who would view the state as a passive agent in Britain’s Industrial Revolution, the historical fact that the artisan-led resistance to the conversion to capitalism in British manufacturing was only overcome through the direct application of state power demonstrates that the state played a very active and central role in the Industrial Revolution.”

Žmolek (2013, p. 42)

“Europe presented itself as a uniquely fortunate natural experiment, with its 300–500 competing political entities in 1500; they were reduced to only 40 in 1820, paralleling the “shakeout” that routinely takes place in new industries in modern times (...). Rivalry among states put a premium on military power, which, in the period from 1400 to 1800, depended on hiring mercenaries.”

Scott (2011, pp. xvii-xviii)

“... without the essential and ongoing work of the visible hand of government to revise as well as enforce market frameworks, we would have much less developed capitalist systems. (...) Capitalism requires more than markets and traders and commission agents; it requires the kinds of security of product specification and compliance that ultimately only government can ensure.”

Scott (2011, p. 65)

“... capitalism was created “top down” in these typically small entities. The critical decisions were by political leaders who authorized potential entrepreneurs to exercise power as a way to help raise incomes for themselves and their communities, where these higher incomes could subsequently be taxed to provide for defense and other public goods.”

Scott (2011, p. 598)

“... it was partially because European states used their power to support mercantilist policies overseas that European merchants were capable of eventually dominating the non-European world, incorporating it into the capitalist world-system. The existing ruling strata in South Asia, by contrast, were more preoccupied with imposing extraeconomic coercion on their agricultural producers than with formulating mercantilist policies.”

Mielants (2007, p. 160)

“The state supported industrialization thoroughly with institutions like national banks, legal protections such as patents, by managing trade through the tariff and commercial treaties, and, when necessary, with force. Without defense by the state, Western entrepreneurs could not have initiated or maintained the industrial revolution.”

Horn (1997, p. vii-viii)

### Elites

“... even by the mid-nineteenth century, some three-quarters of a century into the Industrial Revolution, the United Kingdom was still very much ruled by a landed oligarchy whose interests were converging with those of the industrial mercantile and banking ‘bourgeoisie’.”

Žmolek (2013, p. 794-795)

“Britain’s aristocracy was really no longer an aristocracy, it was a landed oligarchy which had overseen the development of agrarian capitalism and had actually ensured that the same principles of political economy that had been used to abolish feudalism and the peasantry in favour of a system of capitalist tenantfarming were equally applied to manufacturing, by force when necessary.”

Žmolek (2013, p. 795)

“Having managed to gain general control over state power in the seventeenth century, as expressed through Parliament, the ruling landed oligarchy managed to retain this control into the latter half of the nineteenth century. Based on their experience with the success of ‘improved’ agriculture, the landed oligarchs shared an ideological bias in favour of the efforts of capitalist employers to ‘improve’ production in manufacturing.”

Žmolek (2013, p. 838)

“Like later nation-states (...), medieval cities were essential to the development of capitalism (...). In my view, it was the city-states’ political system(s) that had a crucial impact on long-term European socioeconomic processes; it was these political systems that enabled capitalism to grow, thrive, and ultimately expand into a world-economy. Therefore, it is necessary to recognize the importance of early modern cities as the “power containers” of the bourgeoisie. The same policies and techniques of domination and exploitation experimented with and implemented by elites in the medieval European city-state system were later used by the elites of nation-states during the 16th and 17th centuries to foster their ceaseless accumulation of capital.”

Mielants (2007, pp. 42-43)

“... European political structures were different from non-European ones. In the former, merchant communities and guilds struggled for power in their politically independent city-states (something of a precursor to the interstate system of the 16th century) (Arrighi 1994). Gaining this power was crucial to their success as the merchant elites were then able to use the state infrastructure to their advantage.”  
Mielants (2007, p. 155)

“It was the dynamic consequences of the competition among fragmented political bodies that resulted in an especially creative environment.”  
North (2005, p. 138)

“The divergent evolution of the Netherlands and England, on the one hand, and Spain —and France— on the other can be immediately attributed to the different bargaining strength of constituents and rulers and the three underlying sources of that bargaining strength: the gains to constituent groups of the state taking over protection of property; the closeness of substitutes for the existing ruler; the economic structure which determined the yields to various taxes.”  
North (2005, p. 144)

### **Military sector**

“... the military sector in western Europe experienced rapid and sustained productivity growth well before the industrial revolution. The productivity growth has implications for the history of the military revolution in early modern Europe.”  
Hoffman (2011)

“... when Western Europe first forged ahead of other parts of the world—in particular, advanced parts of Asia—in the race toward economic development. Was it only after 1800, with the industrial revolution well underway, that western European per-capita incomes, labour productivity, or technology diverged, or was it earlier, before the industrial revolution? What was the cause of the divergence? Was it beneficial institutions, which stimulated investment and the accumulation of human and physical capital; the evolution of cultural practices that encouraged hard work and education; the scientific revolution and the Enlightenment, which spread useful knowledge and political reform; or was it simply an accident that the industrial revolution started in western Europe?”

... one area in which western Europe possessed an undeniable comparative advantage well before 1800 seems to have been overlooked—namely, violence. The states of western Europe were simply better at making and using artillery, firearms, fortifications, and armed ships than other advanced parts of the world and they had developed the fiscal and organizational systems that armies and navies equipped with this technology required. The Europeans had this advantage long before 1800. By then, they had conquered some 35 per cent of the globe, and they controlled lucrative trade routes as far away as Asia.”  
Hoffman (2011)

“The argument is that early modern Europe was indeed different from Asia, but not in the way we think. The difference cannot be found in scientific spirit, property rights, or factor prices. Where Europe differed was the presence of states that came to the aid of industry, whereas the priority of the Asian states had been prevention of famines.”  
Parthasarathi (2011)

“The key difference between the functioning and sociopolitical position of merchants in the feudal-absolutist – and later capitalist – states in Europe, and those within the tributary societies such as the Ottoman Empire, Mughal India and Imperial China, was therefore the structural dependence of the former states on merchants for war-financing and social reproduction, which gave the merchants a relatively strong position of social and juridical autonomy. In Europe, governments often provided merchants with considerable resources and state backing.”  
Anievas and Nişancıoğlu (2015, p. 257)

### **References**

- Anievas, Alex; Kerem Nişancıoğlu (2015): *How the West Came to Rule: The Geopolitical Origins of Capitalism*, Pluto Press, London.
- Hoffman, Philip T. (2011): “Prices, the military revolution, and western Europe’s comparative advantage in violence, *Economic History Review* 64, S1, 39–59
- Horn, Jeff (2007): *The Industrial Revolution*, Greenwood Press, Westport, Connecticut.
- Mielants, Eric H. (2007): *The Origins of Capitalism and the “Rise of the West”*, Temple University Press, Philadelphia.
- Morris, Ian (2010): *Why the West rules —for Now. The Patterns of History and What They Reveal about the Future*, Profile Books, London.
- North, Douglass Cecil (2005): *Understanding the Process of Economic Change*, Princeton University Press, Princeton, New Jersey.

Parthasarathi, Prasanna (2011): *Why Europe Grew Rich and Asia Did Not: Global Economic Divergence, 1600-1850*, Cambridge University Press, Cambridge, UK.

Scott, Bruce R. (2011): *Capitalism. Its Origins and Evolution as a System of Governance*, Springer, New York.

Žmolek, Michael Andrew (2013): *Rethinking the Industrial Revolution. Five Centuries of Transition from Agrarian to Industrial Capitalism in England*, BRILL, Leiden, The Netherlands.

## Economic policy for prosperity

“A prevailing view among academics in the West in the 1980s and 1990s was that the right approach for the transition was to eliminate all distortions simultaneously in a big bang, as encapsulated in the Washington Consensus. The worst possible approach to follow was gradual piecemeal policy changes as practiced in China.”

Lin (2014, p. x)

“The few successful economies, including China, Vietnam, and Laos, which started their transitions in the 1980s, and Mauritius, which started its transition in the early 1970s, all adopted the gradual dual-track approach—the worst possible choice from the viewpoint of mainstream economics.”

Lin (2014, p. xi)

“The mainstream ideas in the 1950s and 1960s advised the developing countries to build up the large-scale modern, capital-intensive industries prevailing in developed countries at that time (...) Countries following this strategy enjoyed a few years of investment-led growth, but stagnation and crises soon followed. The few economies that achieved miraculous transformation, most in East Asia, followed instead the wrong approach: to develop traditional small-scale, labor-intensive industries for export.”

Lin (2014, p. xi-xii)

“... the prevailing theories in modern times have been advanced mostly by theorists living in the advanced countries. (...) So, if a government in a developing country follows the prevailing theories from the advanced countries to formulate its policies, the results can be the opposite of what the policies were intended to achieve.”

Lin (2014, p. xii)

“The advice from the Washington Consensus was to improve everything for the whole nation simultaneously in one big bang without favoring specific sectors and regions. Instead, the Chinese government mobilized its limited resources and implementation capability to build special economic zones and industrial parks.”

Lin (2014, p. xiii)

“The nature of modern economic growth (...) is a process of continuing enhancements in labor productivity. (...) I am convinced that any developing country can start immediately on a path to a dynamic structural transformation and growth even though endowed with poor infrastructure and business environment. Its government has to adopt a pragmatic approach to use its limited resources and implementation capacity to facilitate the technological innovation and development of industries in which it has comparative advantages so as to keep its factor costs of production comparatively low.”

Lin (2014, p. xiii)

“Developing countries, including those in Sub-Saharan Africa, do not have to wait until all conditions for development are made ready. As this book promotes, they can immediately start on a path of dynamic structural transformation and poverty reduction if their governments use their limited resources and implementation capacity to facilitate the development of sectors in which they have comparative advantages.”

Lin (2014, p. xv)

“The new structural economics described in this book is organized around three ideas:

- First, an economy's structure of factor endowments (...) determines its total budget, relative factor prices, and comparative advantages and evolves from one level of development to another. So the industrial structure of a given economy will differ at different levels of development. Each industrial structure requires the corresponding infrastructure (...) to facilitate its operations and transactions.
- Second, each level of economic development is a point along the continuum from a low-income agrarian economy to a high-income industrialized economy (...). Industrial upgrading and infrastructure improvement targets in developing countries should not necessarily draw from those in high-income countries.
- Third, at each given level of development, the market is the basic mechanism for effective resource allocation (...) in addition to an effective market mechanism, the government should coordinate or provide the improvements in infrastructure and compensate for the externalities to facilitate industrial upgrading and diversification.”

Lin (2014, p. 10)

“many political leaders pursued goals with genuine and noble intentions but caused disastrous consequences for their nations, their people, and sometimes themselves as well. They took signs of a nation's development as the cause of its development.”

Lin (2014, p. 52)

“Economic development is a process of continual industrial upgrading and diversification, with corresponding improvements and adaptations in infrastructure—a process with intrinsic coordination and externality issues. All

countries that have transformed from agrarian economies to modern advanced economies — including those old industrial powers in Western Europe and North America as well as the newly industrialized economies in East Asia— had governments that helped individual firms overcome coordination and externality problems in their structural transformation. Indeed, the governments of high-income countries today continue to play that role.”  
Lin (2014, p. 241)

“The secret recipe to economic success is thus the one that helps policymakers in developing countries identify the industries in which their economies may have latent comparative advantages.”  
Lin (2014, p. 242)

“The key reasons for convergence of successful economies seem to lie in their ability to change their human as well as physical capital endowments, increase the pace of adoption of new ideas, speed the process of industrial upgrading, and improve soft infrastructure (such as institutions) and hard infrastructure (such as transportation and telecommunications networks).”  
Lin (2014, p. 33)

### **Reference**

Lin, Justin Yifu (2014): *The Quest for Prosperity: How Developing Economies Can Take Off*, Second Printing with a New Preface, Princeton University Press, Princeton, New Jersey.

## Sources of growth

“While I fully agree with the importance of human capital accumulation in sustaining growth, I also believe that what truly distinguishes modern economic growth from premodern growth is the way that innovation is integrated into business practices and development and the speed at which this is happening.”

Lin (2014, p. 28)

“Productivity is not simply the result of the availability of capital and technology, or differences in the skills of individual workers. In the modern world, skills can be developed everywhere, and capital and technology flow freely among countries. Economic differences persist because output and living standards are the complex product of the economic environment intersecting with social, political, and cultural institutions. The economic lives of individuals are the product of the systems within which they operate.”

Kay (2004, p. 28-29)

“The destruction of physical capital does not lead to enduring differences in economic performance; the implementation of different mechanisms of economic management does. The stark differences in economic lives that we see around the world are not the result of differences in the availability of resources or education or capital or skills. They are the product of differences in the structure of economic institutions. These latter differences in turn determine the availability of resources, education, capital, and skills.”

Kay (2004, p. 30)

“The difference between rich and poor states is the result of differences in the quality of their economic institutions.”

Kay (2004, p. 354-55)

“Rich states are the product of -literally- centuries of coevolution of civil society, politics, and economic institutions. A coevolution that we only partially understand and cannot transplant. In the only successful examples of transplantation - the Western offshoots- entire populations, and their institutions, were settled in almost empty countries. The appeal of the American business model today, as of Marxism yesterday, is the suggestion that the history of economic institutions, the structure of current society, and the path of future development have a simple economic explanation and an inevitable outcome. This is as misleading a view of political economy as the Marxist one. There is no grand narrative, only little stories.”

Kay (2004, p. 355)

“The difference between rich nations and poor nations is (...) that rich nations produce more goods and services. One reason they can do so is because their technology is better; that is, their ability to control and manipulate nature and people for productive ends is superior. (...) Western technological superiority has deep historical roots, and can only be understood-if at all-by an analysis that is willing to look back centuries, even millennia. To be sure, technology cannot take all the credit: the development of law, trade, administration, and institutions were all part of the story. Yet (...) technological creativity was at the very base of the rise of the West. It was the lever of its riches.”

Mokyr (1990, p. vii)

“For a society to be technologically creative, three conditions have to be satisfied. First, there has to be a cadre of ingenious and resourceful innovators who are both willing and able to challenge their physical environment for their own improvement. Innovation of any kind is unlikely in a society that is malnourished, superstitious, or extremely traditional. Second, economic and social institutions have to encourage potential innovators by presenting them with the right incentive structure. In part, such incentives are economic; technological creativity is more likely if an innovator can expect to become rich. Noneconomic incentives can matter too, however. A society can reward successful innovators by awarding them medals, Nobel prizes, or intangible symbols of prestige. Third, innovation requires diversity and tolerance. In every society, there are stabilizing forces that protect the status quo. Some of these forces protect entrenched vested interests that might incur losses if innovations were introduced, others are simply don't-rock-the-boat kinds of forces. Technological creativity needs to overcome these forces.”

Mokyr (1990, p. 11-12)

“... the prime requirement of growth is intersectorial harmony : one sector should not be allowed to block progress being made in another.”

Braudel (1984, p. 541)

“... spread of modern economic growth has depended chiefly on the diffusion of a body of knowledge concerning new production techniques.”

Easterlin (1981, p. 1)

### **Foremost question of modern economic history**

“Why the spread of economic growth has been so limited: why isn't the whole world developed? Beyond this, there is the question of the future: will the whole world become developed? If so, how soon?”

Easterlin (1981, p. 2)

“The historical experience of the advanced economies and that of Asian countries such as South Korea indicates that development entails a shift from dependence on agricultural activities (especially on farming) into reliance on modern industrial and service sectors. This shift is referred to as structural transformation and is what leads to fast and sustained growth. In other words, becoming a developed country requires achieving sustained growth for a period of decades. In general, the only way to do this is through significant structural transformation.”

Felipe et al (2013, p. 792)

### **Structural transformation**

“... structural transformation is the process by which countries change what they produce and how they do it, as well as how they move from low-productivity and low-wage activities to high-productivity and high-wage activities. Structural transformation has three components: (i) shifts in the output structure, from activities of relatively low productivity into high-productivity activities; (ii) shifts in the employment structure, typically a decline in the share of employment in agriculture; and (iii) upgrading and diversification of the production and export baskets. It is not obvious how this process happens, except that in all successful cases there has been some form of government intervention.”

Felipe et al (2013, pp. 792-793)

### **References**

Braudel, Fernand (1984): *Civilization and capitalism, 15th-18th century, Volume III: The perspective of the world*, Collins, London.

Easterlin, Richard A. (1981): “Why Isn't the Whole World Developed?”, *The Journal of Economic History* 41(1), 1-19.

Felipe, Jesus; Utsav Kumar; Norio Usui; Arnelyn Abdon (2013): “Why has China succeeded? And why it will continue to do so”, *Cambridge Journal of Economics* 37, 791-818.

Kay, John (2004): *Culture and Prosperity. The Truth about Markets: Why some Nations are Rich but most Remain Poor*, Harper Business, New York.

Mokyr, Joel (1990): *The lever of riches*

Lin, Justin Yifu (2014): *The Quest for Prosperity: How Developing Economies Can Take Off*, Second Printing with a New Preface, Princeton University Press, Princeton, New Jersey.

## The Industrious Revolution

“... in the seventeenth and eighteenth centuries, and increasing number of people linked together in family units worked harder and longer not only to keep body and soul together, but increasingly to get things they wanted for their own use or consumption. This intensification of human endeavor has been termed the "industrious revolution" by Jan DeVries. He argues that households "made decisions that increased both the supply of marketed commodities and labor and the demand for goods offered in the marketplace." Two factors made this possible: a reduction of leisure time —on the part of men, women, and children— in favor of wage labor; and a shift from producing a wide variety of goods and services for direct consumption to purchasing marketed goods. This latter switch implied greater specialization and helped to increase productivity.”

Horn (1997, pp. 13-14)

“What caused this willingness to work harder and longer? Both contemporaries and historians point to the emergence of a seemingly insatiable consumer demand for luxury goods and colonial commodities that affected most of northwestern Europe. Although the passion for fashion was noticeable mostly among the elite and the growing middle classes -the demand for new consumer goods also extended to the laboring classes.”

Horn (1997, p. 14)

### Reference

Horn, Jeff (2007): The Industrial Revolution, Greenwood Press, Westport, Connecticut.



## **The myth of the European miracle**

“The myth of the European miracle is the doctrine that the rise of Europe resulted, essentially, from historical forces generated within Europe itself; that Europe’s rise above other civilizations, in terms of level of development or rate of development or both, began before the dawn of the modern era, before 1492; that the post-1492 modernization of Europe came about essentially because of the working out of these older internal forces, not because of the inflowing of wealth and innovations from non-Europe; and that the post-1492 history of the non-European (colonial) world was essentially an outflowing of modernization from Europe.”

Blaut (1993, p. 59)

### **Reference**

[Colonizers model of the world] - James M Blaut 1993

## The West and the Rest

“... what distinguished the West from the Rest – the mainsprings of global power – were six identifiably novel complexes of institutions and associated ideas and behaviours. For the sake of simplicity, I summarize them under six headings:

1. Competition
2. Science
3. Property rights
4. Medicine
5. The consumer society
6. The work ethic

1. Competition – a decentralization of both political and economic life, which created the launch-pad for both nation-states and capitalism.

2. Science – a way of studying, understanding and ultimately changing the natural world, which gave the West (among other things) a major military advantage over the Rest.

3. Property rights – the rule of law as a means of protecting private owners and peacefully resolving disputes between them, which formed the basis for the most stable form of representative government.

4. Medicine – a branch of science that allowed a major improvement in health and life expectancy, beginning in Western societies, but also in their colonies.

5. The consumer society – a mode of material living in which the production and purchase of clothing and other consumer goods play a central economic role, and without which the Industrial Revolution would have been unsustainable.

6. The work ethic – a moral framework and mode of activity derivable from (among other sources) Protestant Christianity, which provides the glue for the dynamic and potentially unstable society created by apps 1 to 5.”

### Reference

Ferguson, Niall (2011) : Civilization: The West and the Rest, Allen Lane

## The Industrial Revolution

“Explaining the technological breakthroughs of the eighteenth century is, therefore, the key to explaining the Industrial Revolution.”

Allen (2009, p. 1)

“The Industrial Revolution, in short, was invented in Britain in the eighteenth century because it paid to invent it there, while it would not have been profitable in other times and places. The prices that governed these profitability considerations were the result of Britain’s success in the global economy after 1500, so the Industrial Revolution can be seen as the sequel to that first phase of globalization.”

Allen (2009, p. 2)

“Britain’s success in the early Industrial Revolution was based on inventing technology that was tailored to its circumstances and useless elsewhere.”

Allen (2009, p. 3)

“Thus the Industrial Revolution owes its pedigree to a series of processes that brought about a transformation of social property relations resulting in widespread market dependence and market regulation of the economy. While this entire process involved class struggle in the form of resistance on the part of direct producers seeking to avoid loss of access to means of subsistence or loss of control of the labour process, and thus required active suppression of such resistance on the part of surplus appropriators, this emphasis on ‘active’ or ‘conscious’ suppression of resistance should not be taken to mean that landlords, tenant-farmers or state policy-makers were aware throughout the process that the long-term consequences of their actions would result in a capitalist society and an industrial revolution.”

Žmolek (2013, p. 5)

“... the world’s first industrial revolution did not come about as the result of the operation of natural and immutable economic laws but rather through a series of processes that involved conscious decisions and actions by social agents engaged in a long train of struggles over the preservation of customary modes of economic regulation versus the expansion of market regulation of the economy and the subsumption of social relations to capital. This series of processes by which pristine capitalism and pristine industrialisation first developed in Britain was protracted and complex.”

Žmolek (2013, p. 793)

“... the adoption of capitalist institutions is a political decision, and not one based upon the economics of cost effectiveness (...) Governments have to be willing to delegate power to economic actors while holding them accountable, at a minimum, to pay taxes.”

Scott (2011, p. 603)

“... an important part of the story of the industrial revolution is how the states of the West —through trade, conquest, and colonization— were able to appropriate the land, labor, and natural resources of other parts of the world for their own benefit.”

Horn (1997, p. vii)

“The Western countries may have come to dominate other parts of the world, but domination for economic purposes began at home. Great Britain could initiate an industrial revolution because its entrepreneurs were able to enforce work rhythms, laboring conditions, and wage scales that would have provoked social revolution in all of its closest competitors. By transforming the relationship of the laboring classes to the industrial work process, British entrepreneurs, their imitators, and their competitors were able to earn phenomenal profits and generate wealth at an unprecedented rate.”

Horn (1997, p. vii)

“the reason the First Industrial Revolution took place in Britain is because capitalism first originated in only one country: England.”

Žmolek (2013, p. 6)

“Britain became the ‘workshop of the world’ because the superior economic might of its agrarian-capitalist economy provided the necessary financial and military strength necessary to defeat first Holland and then France in a series of wars from the late seventeenth and eighteenth centuries in order to emerge as the preeminent commercial power in the world. At the very same time, the manufacturing sector of Britain’s economy was transformed along capitalist lines, allowing for unprecedented increases in productivity and output of goods that could be marketed at the most competitive prices in the colonies and world-wide. Secondly, this ‘breakthrough’ happened in the latter half of the eighteenth century because the same terms of trade that in the first half of the century had enabled agrarian capitalism to respond to falling prices by intensifying production shifted to favour manufacturing in ways that made innovation and

the application of machinery to production uniquely profitable. Thirdly, the Industrial Revolution was 'ignited' and did not fizzle out, because just as self-sustaining growth had already been achieved in agriculture, the process of capitalist development in manufacturing also involved self-reinforcing mechanisms based upon the conversion to open market competition. The application of state force was required, however, in order to suppress a long struggle characterised by episodic violence waged by traditional craft artisans seeking to preserve the customary mode of production that was the basis of their livelihood, their independence and their honour.”  
Žmolek (2013, p. 795-796)

“...the industrial revolution was at least twofold. It was a revolution in the ordinary sense of the word, bringing its visible changes in a sequence of short-term events, yet it was at the same time a long-term process, advancing with discreet and silent steps, sometimes barely discernible at all.”  
Braudel (1984, p. 538)

“... the industrial revolution and its eventual use by the Europeans to achieve a position of dominance in the world economy cannot be adequately explained on the basis only of factors “internal” to Europe, not even supplemented by its accumulation of capital extracted from its colonies. We need a world economic accounting for and explanation of this global process.”  
Frank (1998, p. 37)

“There is no way we can understand and account for what happened in Europe or the Americas without taking account of what happened in Asia and Africa—and vice versa—nor what happened anywhere without identifying the influences that emanated from everywhere, that is from the structure and dynamic of the whole world (system) itself. In a word, we need a holistic analysis to explain any part of the system.”  
Frank (1998, p. 37)

“The argument here is that the upward “A” phase since about 1400 of such a long cycle reached its upper turning point and gave way to a succeeding long “B” phase, especially for the more central economies in Asia between 1750 and 1800. (...) That long “A” phase of expansion that came to an end in Asia in the late eighteenth century and its subsequent (cyclical?) decline offered the still marginal West its first real opportunity to improve its relative and absolute position within the world economy and system. Only then could the West go on to achieve a (temporary?) period of dominance.”  
Frank (1998, p. 263)

### **Importance of knowledge and values (the immaterial)**

“Industrial development occurred first in Britain for reasons that had to do with science and culture, not simply or exclusively with raw materials, capital development, cheap labor, or technological innovation. (...) In some places and not in others mental shifts led to entrepreneurial activity and to the more rapid application of power technology.”  
Jacob (1997, p. 2)

### **References**

- Allen, Robert C. (2009): *The British Industrial Revolution in Global Perspective*, Cambridge University Press, Cambridge, UK.
- Braudel, Fernand (1984): *Civilization and capitalism, 15th-18th century, Volume III: The perspective of the world*, Collins, London.
- Frank, Andre Gunter (1998): *Re-ORIENT: Global economy in the Asian age*, University of California Press, Berkeley, CA.
- Horn, Jeff (2007): *The Industrial Revolution*, Greenwood Press, Westport, Connecticut.
- Jacob, Margaret C. (1997): *Scientific culture and the making of the industrial West*, Oxford University Press, New York.
- Žmolek, Michael Andrew (2013): *Rethinking the Industrial Revolution. Five Centuries of Transition from Agrarian to Industrial Capitalism in England*, BRILL, Leiden, The Netherlands.

## The Washington Consensus

TABLE 11.1 The Washington Consensus and East Asia

Elements of the Washington Consensus	South Korea	Taiwan
1. Fiscal discipline	Yes, generally	Yes
2. Redirection of public expenditure priorities toward health, education, and infrastructure	Yes	Yes
3. Tax reform, including the broadening of the tax base and cutting marginal tax rates	Yes, generally	Yes
4. Unified and competitive exchange rates	Yes (except for limited time periods)	Yes
5. Secure property rights	President Park starts his rule in 1961 by imprisoning leading businessmen and threatening confiscation of their assets	Yes
6. Deregulation	Limited	Limited
7. Trade liberalization	Limited until the 1980s	Limited until the 1980s
8. Privatization	No. Government established many public enterprises during 1950s and 1960s.	No. Government established many public enterprises during 1950s and 1960s.
9. Elimination of barriers to direct foreign investment (DFI)	DFI heavily restricted	DFI subject to government control
10. Financial liberalization	Limited until the 1980s	Limited until the 1980s

Todaro and Smith, p. 532

### BOX 11.2 The New Consensus

1. Development must be market-based, but there are large market failures that cannot be ignored.
  2. Government should not be in the business of direct production, as a general rule.
  3. Nevertheless, there is a broad, eclectic role for government in the following areas:
    - Providing a stable macro environment
    - Infrastructure, though in fewer sectors than thought necessary in the past
    - Public health
    - Education and training
    - Technology transfer (and for advanced developing economies, the beginnings of original R&D)
- Ensuring environmentally sustainable development and ecological protection
  - Providing export incentives
  - Helping the private sector overcome coordination failures
  - Ensuring “shared growth” by acting to reduce poverty and inequality and to ensure that as the economy grows, the poor share substantially in the benefits
  - Prudential supervision and regulation of the financial sector
  - Provision of fundamental public goods, including institutions such as protection of property rights and broad access to opportunity

## The pursuit of excellence

“Excellence exists, and it is time to acknowledge and celebrate the magnificent inequality that has enabled some of our fellow humans to have so enriched the lives of the rest of us.”

Murray (2004, pp. 449-450)

“Equality is a fine ideal, and should have an honored place. To have understood that each person is unique, that each person must be treated as an end and not a means, that each person should be free to live his life as he sees fit, so long as he accords others the same freedom, that each person should be equal before the law and is equal in God’s sight, and to incorporate these principles into the governance of nations—these are among the greatest of all human accomplishments. But equality has nothing to do with the abilities, persistence, zeal, and vision that produce excellence. Equality and excellence inhabit different domains, and allegiance to one need not compete with allegiance to the other. Excellence is not simply a matter of opinion, though judgment enters

into its identification. Excellence has attributes that can be identified, evaluated, and compared across works.”

Murray (2004, p. 450)

“The nature of accomplishment in a given time and place can be predicted with reasonable accuracy given information about that culture’s status with regard to the four dimensions of purpose, autonomy, organizing structure, and transcendental goods.”

Murray (2004, p. 451)

“A culture can produce a stream of accomplishment while being strong on only some of the four dimensions. The East Asian, South Asian, and Arabic civilizations are examples. All were at a disadvantage (in terms of accomplishment in the arts and sciences) throughout their histories, in the sense that all were cultures in which duty trumped vocation, familism trumped individualism, and consensus trumped debate.”

Murray (2004, p. 452)

“The limits facing civilizations where duty, family, and consensus are primary values differ for the arts and sciences. In the arts, respect for tradition means that artistic structures are not periodically rebuilt from scratch, but elaborated slowly and incrementally. Respect for tradition does not diminish the technical excellence of the work at its best, but it does militate against variety and innovation. In the sciences, the constraints are more severe. The fuel of the scientific method—nonstop debate and fierce competition to put the next brick of the edifice in place—seems to demand individualism on the Western model. Improvements in the state of knowledge can be made without it, but individualism is valuable for achieving breakthroughs.”

Murray (2004, p. 452)

“The Aristotelian principle means that human beings with the potential for excellence will usually try to realize that potential, given the chance. But how hard they try, and how they go about it, are decisively affected by how they see their places in the universe at one extreme, and their places in their own families and communities at the other. Culture in turn affects these ways of seeing, and in doing so affects the likelihood that the people with the capacity for excellence will achieve it. I label two important ways of seeing one’s place in the world purpose and autonomy.”

Murray (2004, p. 391)

### “1 Purpose

One of the most overlooked aspects of excellence is how much work it takes. Fame can come easily and overnight, but excellence is almost always accompanied by a crushing workload, pursued with single-minded intensity. Strenuous effort over long periods of time is a repetitive theme in the biographies of the giants, sometimes taking on mythic proportions.”

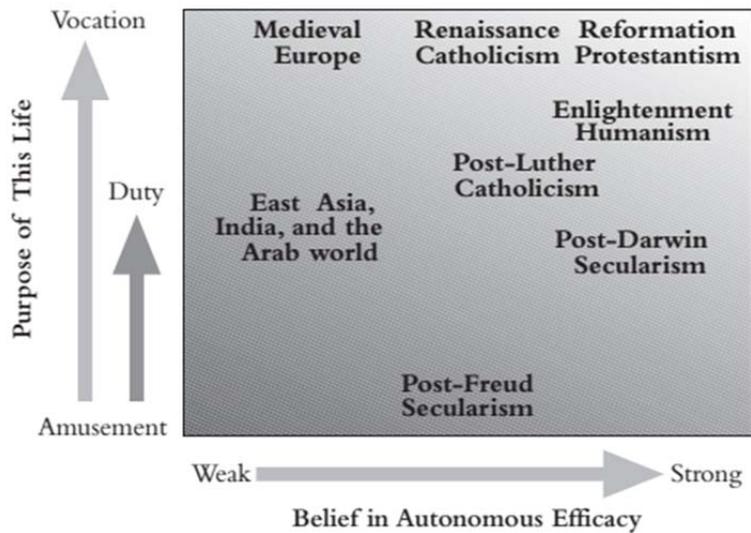
Murray (2004, p. 392)

### “2- Autonomy

Purpose refers to a person’s belief that life has a meaning. Autonomy refers to a person’s belief that it is in his power to fulfill that meaning through his own acts. Own acts is a crucial element, for the creative act is both audacious and individual by nature. This is not equivalent to saying that great accomplishment always occurs among people acting alone. Scientific knowledge is advanced by sharing ideas with colleagues, and there is the occasional example of a great collaboration in the arts. But creativity ultimately comes down to small, solitary acts in which an individual conceives of something new and gives it a try, without knowing for sure how it will turn out. Streams of accomplishment are more common and more extensive in cultures where doing new things and acting autonomously are encouraged than in cultures that disapprove.”

Murray (2004, pp. 394-395)

“The proposition is that highly familistic cultures and ones that revere the past will limit both autonomy and creativity and hence will be ones in which streams of accomplishment are constrained.”



Murray (2004, p. 406)

“What are the variables that help explain what kind of work is produced in a given era and place? The two variables I use are labeled organizing structure and transcendental goods.

### 3- Organizing structure

By organizing structure, I mean the framework for the conduct of science or the arts and the criteria according to which a society evaluates achievement.

### 4- Transcendental goods

A major stream of accomplishment in any domain requires a well articulated vision of, and use of, the transcendental goods relevant to that domain.”

### Reference

Murray, Charles (2004): Human Accomplishment: The Pursuit of Excellence in the Arts and Sciences 800 BC to 1950

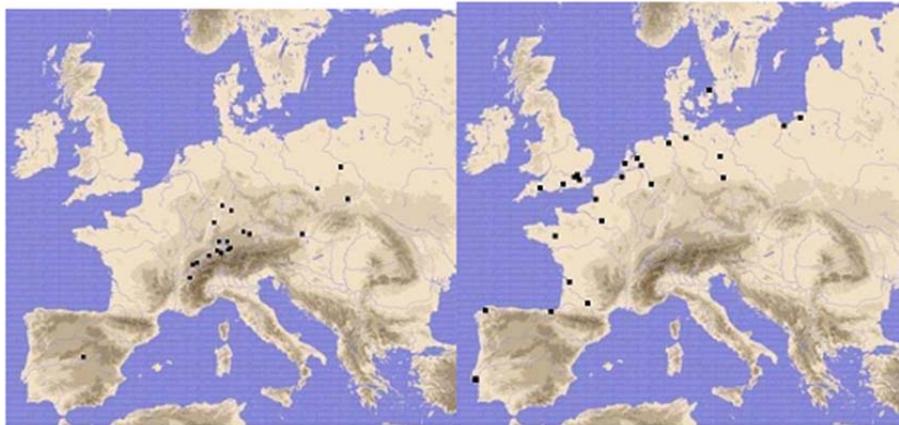
## The two Europes

“There is little agreement about when the process of European market integration began, about the extent of trade and market integration at various points in early modern Europe, or about the comparative levels of economic integration Europe had reached relative to the rest of the world.”

“Does market integration help to explain why it was Europe that led the economic development in the world and industrialised first? Does it give us a clue about why, within Europe, it was its North-western part that spearheaded the ‘rise of Europe’? Fact is: we do not really know.”

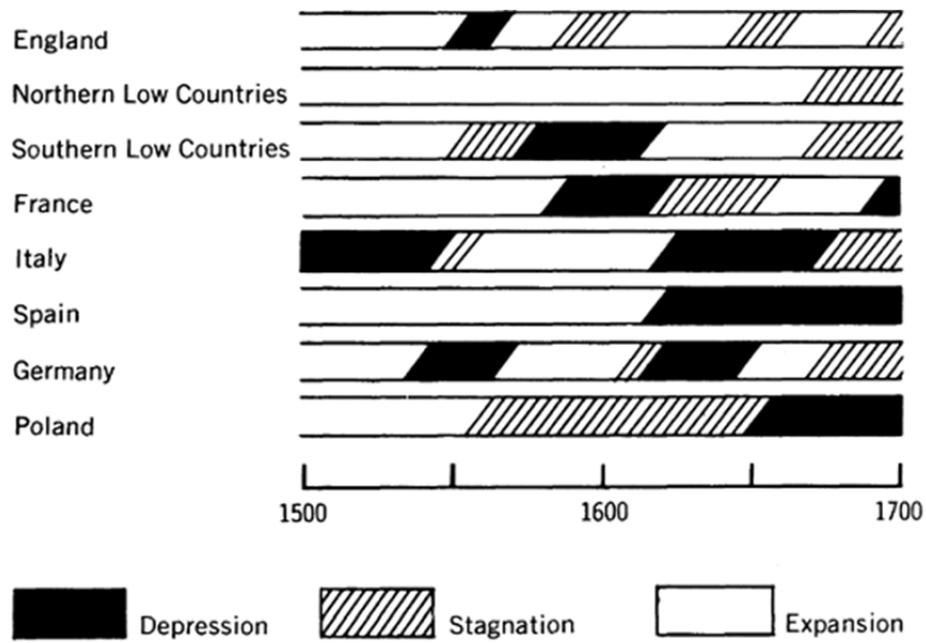
“It appears that physical geography is not only an important dimension to add to the history of economic integration in Europe, but that it is actually the most characteristic feature of grain markets in early modern Europe. Most variation in prices across Europe is explained by the fact that price movements are similar within lowland Europe and within landlocked Europe.”

**Figure 5: The ‘Two Europes’: Landlocked and Lowland Europe**



‘Landlocked Europe’ sample of 20 markets ‘Lowland Europe’ sample of 25 markets

“In the early modern period, lowland Europe’s markets clearly extended to much bigger geographical areas: co-movement was stronger and shows close integration over longer distances than in landlocked Europe. Accordingly, price dispersion is much greater in the interior, as are volatility levels. The eighteenth century then brought about the beginning of the end of lowland Europe’s advantage, as market areas expanded substantially in the landlocked part, but only modestly in the lowland parts. On a regional and interregional scale, both increasing correlation coefficients and converging prices supported this picture of convergence. The general level of integration was still higher in lowland Europe by the turn of the nineteenth century, but the difference had been much reduced. The second quarter of the nineteenth century saw, however, a renewed divergence between the two regions, as in lowland parts integration in this period clearly broke out of the pre-modern ties, so that even very distant markets were now connected, while prices between them converged. Landlocked Europe had to await the construction of a dense railway network in the second half of the century to experience the same acceleration of integration, which eventually resulted in the formation of a pan-European market. Overall, the eighteenth and nineteenth centuries saw a convergence in terms of market integration between the two Europes.”



Cipolla (1993, p. 184)

**Reference**

Cipolla, C. M. 1993: Before the Industrial Revolution: European Society and Economy, 1000–1700, 3rd edition, Routledge, London.

Studer, Roman (2009): Does Trade Explain Europe’s Rise? Geography, Market Size And Economic Development, Working Papers No. 129/09, London School of Economics.

## Types of national economies

### Scavengers

“Scavengers are parasitic economies of the predators. As such, their situation tends to be precarious. Scavengers differ according to their source of sustenance.

1/ Conjunctures and crises. Scavengers of this type take advantage of the conflict between economies. Their wealth comes from violating laws and from acting as black and illegal markets (contraband, arms trade, smuggling)

2/ Criminal organizations. The economy is infiltration by criminal organizations. They accumulate money as a result of conducting criminal activities and the money is next laundered.

3/ Services. They are external appendages of an economy where domestic law can be by-passed: free zones, off shore havens, off shore banking and transshipment ports, tax shelters...

4/ Aid. Economies that rely on aid (handouts, soft loans, technical assistance) coming from external economies: donor economies, multilateral aid agencies and NGOs. Aid dependence is likely to turn into addiction and production activities tend to be replaced by lobbying and political manoeuvring.

5/ Marginalization. Economies that become strongly dependent on other economies because: those economies absorb most of trade of the marginalized economy; or the marginalized economy specializes in a few products or services; or is a minor partner (or a potential one) in regional alliance; or is under the direct protection of a powerful economy.

6/ Copycat. The economy is based on piracy: copying and emulating commodities, processes, technologies, patents, designs, copyrighted material, innovations... originally made or developed by others. Such economies prosper as long as they can profit from emulation: further innovations by the rest of economies limit the long-run sustainability of a copycat economy. They are also exposed to the international business cycle, trade uncertainties and retaliation by those economies harmed by piracy.”

### Predators

“Predators are economies taking a leading role. There are several sources of economic leadership.

1/ Intellectual property. Some predators generate intellectual property by encouraging and developing innovation. They obtain income from licensing and royalties. They stimulate globalization, but generally lack the manufacturing and marketing basis to develop by themselves the industrial applications of the generated intellectual property.

2/ Industry. These predators constitute industrial bases that make use of the intellectual property created by the first type of predators. These economies add enough value to the intellectual property through adaptation to markets, image and brand creation, designing and implementing production processes, demand creation...

3/ Consumption. These are consumer oriented economies based on intangibles (services, information, knowledge, advertising, entertainment, financial assets) or commodities that enhanced the consumer's welfare (like pharmaceuticals). They focus on fostering and maintaining markets.

4/ Trade. Trader economies provide the channels of circulation of commodities and services, specifically, physical transportation, telecommunications, and educated manpower. Scavenger economies depend crucially on the growth of trader economies, which could be considered engines of globalization and world growth.”

### Reference

Vaknin, Sam (2003): *After the Rain: How the West Lost the East*, 2nd edition, Narcissus Publications, Skopje.

## The end of male supremacy

“Recent brain imaging studies show that a part of the brain that helps produce violence, called the amygdala, is larger in men than in women. Also, the frontal cortex (frontal lobes), which help to regulate impulses coming from the amygdala, is (are) more active in women. Mounting evidence supports the claim that male and female brains are different in many species, including us, partly because of androgenizing (masculinizing) influences of testosterone on the (anterior) hypothalamus, amygdala, and other parts of the brain involved in sex and violence.”

“Once, all of our ancestors could reproduce from their own bodies; we were all basically female. (...) Why did those self-sufficient females invent males? It had to be a very big reason, since they were bringing in a whole new cast of characters who took up space and ate their fill, but could not themselves realize the goal of evolution: creating new life.”

“The best answer seems to be: to escape being wiped out by germs. When you make new life on your own, you basically clone yourself, and ultimately lots of your offspring and relatives have the same genes. The germ that gets one of you gets you all. Create males, and in due course there is much more variation. Meanwhile, you export the fiercest part of the competition. You do the reproducing, he doesn't (except for his teensy donation), so he can duke it out with the other males and they can evolve faster. But it turns out you have created a sort of Frankenstein monster, after a certain point hard to control.”

“... women are not equal to men; they are superior in many ways, and in most ways that will count in the future. It is not just a matter of culture or upbringing, although both play their roles. It is a matter of biology and of the domains of our thoughts and feelings influenced by biology. It is because of chromosomes, genes, hormones, and nerve circuits (...) women can carry on the business of a complex world in ways that are more focused, efficient, deliberate, and constructive than men's, because women are not frequently distracted by impulses and moods that, sometimes indirectly, lead to inappropriate sex and unnecessary violence. Women are more reluctant participants in both. And if they do have to be drawn into wars, these will be wars of necessity, not wars of choice, founded on rational considerations, not on a clash of egos escalating out of control.”

“In addition to women's superiority in judgment, their trustworthiness, reliability, fairness, working and playing well with others, relative freedom from distracting sexual impulses, and lower levels of prejudice, bigotry, and violence make them biologically superior. They live longer, have lower mortality at all ages, are more resistant to most categories of disease, and are much less likely to suffer brain disorders that lead to disruptive and even destructive behavior. And, of course, most fundamentally they are capable of producing new life from their own bodies.”

### **Robust claim: men do the great majority of killings in every culture.**

“when men get together in groups that exclude women, their higher average levels of these emotions produce a toxic dynamic that has poisoned the stream of history.”

“There is a birth defect that is surprisingly common, due to a change in a key pair of chromosomes. In the normal condition the two look the same, but in this disorder one is shrunken beyond recognition. The result is shortened life span, higher mortality at all ages, an inability to reproduce, premature hair loss, and brain defects variously resulting in attention deficit, hyperactivity, conduct disorder, hypersexuality, and an enormous excess of both outward and self-directed aggression. The main physiological mechanism is androgen poisoning, although there may be others. I call it the X-chromosome deficiency syndrome, and a stunning 49 percent of the human species is affected. It is also called maleness.”

“... we can think of maleness as a syndrome, a chromosomal defect shared by 49 percent of humans. It does serious damage. It quashes the body's ability to create new life, causes excess death at all ages, shortens life, increases the risk of diseases ranging from heart attack to autism, and causes physical violence, among other symptoms. Most of this is due to androgen toxicity, mainly testosterone poisoning, although estrogen deprivation and other hormonal glitches play a role. But most of it can be traced back to the Y.”

“The mammalian body plan is basically female. If you have just one X (Turner syndrome), you will not be fertile, but you will otherwise be female, as long as you have no Y. If you have two or more X's but also a Y (Klinefelter syndrome), you will not be completely typical, but you will be basically male. There are rare cases of infertility in women who are found to be XY but are insensitive to androgens due to another gene. And a few men seem to be XX under the microscope but are found to have the key Y genes accidentally attached to one of their X's—something that can happen in a slightly awry cell division. Otherwise it's fair to say: the body plan is female unless the Y flips it into maleness”

### **Reference**

**Konner, Melvin (2015): Women After All: Sex, Evolution, and the End of Male Supremacy**

## The dark side of institutions

“Distributional conflicts provide a better explanation than efficiency for the core economic institutions of pre-industrial Europe: serfdom, the community, the craft guild, and the merchant guild.

### Presumption that an institution is an efficient solution to an economic problem

“... viewing institutions as invariably good solutions to economic problems is too optimistic”

“The view that institutions are efficient arises from the idea that people will not voluntarily choose more costly ways of transacting.”

Ogilvie, Sheilagh (2007, p. 656)

### The efficiency approach to institutions

“What one might call the ‘strong’ version of the efficiency approach—most clearly articulated by the economist Alchian—holds that even if people cannot actually identify which institutions are efficient, an evolutionary process of Darwinian selection ensures that only those institutions survive that are efficient. This implacably weeds out less efficient institutions and ensures that better ways of organizing economic life gradually evolve. The ‘weak’ version of the efficiency view, by contrast, holds that institutions initially arise because they are efficient, but are then sometimes kept in being by path dependency long after changes in exogenous parameters render them inefficient. One problem with both ‘strong’ and ‘weak’ versions of the efficiency approach is that they never actually define the happy state of ‘efficiency’ created by their favoured institutions.”

Ogilvie, Sheilagh (2007, p. 656)

“A first desideratum for any theory of institutions is to take into account the fact that any institution does many things. Efficiency approaches generally focus on a single aspect of an institution in isolation. Each model emphasizes a specific activity, and claims that the institution’s efficiency in that activity benefited the entire economy. But this ignores a universal feature of institutions—people use them for many purposes. Most of the ways an institution is used will affect efficiency, whether positively or negatively. Moreover, its ‘efficient’ and ‘inefficient’ activities are generally not separable; an institution comes as a package.”

Ogilvie, Sheilagh (2007, p. 668)

“Any useful economic theory of institutions must also take into account the fact that institutions often exclude people from their benefits—or even from entire spheres of economic activity.”

Ogilvie, Sheilagh (2007, p. 671)

“A third desideratum for any theory of institutions is to recognize the importance of self-sustaining institutional frameworks. Efficiency approaches typically focus on one institution at a time: serfdom, the commune, the guild, the property rights system. But institutions do not exist in isolation. Can we really explain any given institution without looking at the wider framework of other institutions surrounding it?”

Ogilvie, Sheilagh (2007, p. 674)

“A final desideratum for any economic theory of institutions is to do justice to the interplay between inward beliefs and values on the one hand and institutional rules on the other.”

Ogilvie, Sheilagh (2007, p. 675)

“Typically, the institutions of a society have coexisted for centuries, continually evolving a division of activities, supporting one another in all sorts of ways. These ways may not necessarily be efficient, but they are often self-sustaining. Taking a solitary institution out of its original institutional framework (which may have helped to sustain it), and seeking to transplant it into a quite different framework (which may even resist its encroachment), is not unlikely to fail.”

### Reference

Ogilvie, Sheilagh (2007): “‘Whatever is, is right’? Economic institutions in pre-industrial Europe”, *Economic History Review* 60(4), 649-684.

## China's rise

### **Stylized facts of China's rise (high output growth rates)**

- high growth rates of capital accumulation, driven by high investment–output ratios
- marked outward orientation through export-led growth policies
- the pursuit of industrialisation (in particular the production and export of manufactures).

China's miracle is that it has been able to sustain this process for three decades.

Felipe et al (2013, pp. 791-792)

“The key factor underlying China's fast development during the last 50 years is its ability to master and accumulate new and more complex capabilities, reflected in the increase in diversification and sophistication of its export basket. This accumulation was policy induced and not the result of the market, and began before 1979.”

Felipe et al (2013, p. 791)

“The evidence of history simply negates the long-standing myth, propagated since the eighteenth century primarily by Westerners frustrated by their inability to impose their will on China, of Chinese isolation and isolationism. Well before the advent of Europeans to East Asia, China was integrated into a wide-ranging network of commercial, intellectual, religious, and cultural contacts that linked it with the whole of Asia, the eastern Mediterranean, at least the northern part of Africa, and periodically even lands farther afield. (...) This age-old experience of international exchange brought China to a keen awareness of the perils of unrestrained interaction with others who might not share its values and traditions.”

Waley-Cohen (1999, p. 283)

### **Reference**

Felipe, Jesus; Utsav Kumar; Norio Usui; Arnelyn Abdon (2013): “Why has China succeeded? And why it will continue to do so”, *Cambridge Journal of Economics* 37, 791-818.

Waley-Cohen, Joanna (1999): *The Sextants of Beijing: Global Currents in Chinese History*, W. W. Norton, New York.

## Socioeconomic laws?

### Larry Niven's laws for writers

4. It is a sin to waste the reader's time.

5. If you've nothing to say, say it any way you like. Stylistic innovations, contorted story lines or none, exotic or genderless pronouns, internal inconsistencies, the recipe for preparing your lover as a cannibal banquet: feel free. If what you have to say is important and/or difficult to follow, use the simplest language possible. If the reader doesn't get it then, let it not be your fault.

### Freedom and security

The product of freedom and security is a constant

### Ethics and technology

Ethics change with technology

### Suffering and boredom

The product of suffering and boredom is a constant

### Arthur C. Clarke's 3rd law

Any sufficiently advanced technology is indistinguishable from magic.

### Variations on Clarke's third

- Any technology distinguishable from magic is insufficiently advanced. (Gregory Benford's variation)
- Any sufficiently advanced magic is indistinguishable from technology. (Clarke's third law, addendum.)
- Any sufficiently advanced technology is indistinguishable from a completely ad-hoc plot device. ('Langfords law')
- Any technology, regardless of how advanced, will seem like magic to those who do not understand it. (Mark Stanley, Freefall)

<http://www.gregorybenford.com/uncategorized/variations-on-clarkes-third-law/>

### Isaac Asimov's laws of robotics (applicable to people)

1. A robot may not injure a human being or, through inaction, allow a human being to come to harm.
2. A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.
3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Laws.

### (Roy Charles) Amara's Law

We tend to overestimate the effect of a technology in the short run and underestimate the effect in the long run.

### Gibrat's law

The size of a firm and its growth rate are independent

### (Charles) Goodhart's law

When a measure becomes a target, it ceases to be a good measure.

### Hofstadter's law

It always takes longer than you expect, even when you take into account Hofstadter's Law.

### (Patrick) Hutber's law

Improvement means deterioration (founded on the cynical observation that a stated improvement actually hides a deterioration: any public expression of improvement is suspect on the grounds that improvement is only touted when it can serve to conceal some form of deterioration)

### Melvin Kranzberg's six laws of technology state

1. Technology is neither good nor bad; nor is it neutral.
2. Invention is the mother of necessity.
3. Technology comes in packages, big and small.
4. Although technology might be a prime element in many public issues, nontechnical factors take precedence in technology-policy decisions.
5. All history is relevant, but the history of technology is the most relevant.
6. Technology is a very human activity - and so is the history of technology

[https://en.wikipedia.org/wiki/Melvin\\_Kranzberg#Kranzberg.27s\\_laws\\_of\\_technology](https://en.wikipedia.org/wiki/Melvin_Kranzberg#Kranzberg.27s_laws_of_technology)

### (George Armitage) Miller's law (in communication)

To understand what another person is saying, you must assume that it is true and try to imagine what it could be true of

### **(George) Miller's law (in psychology)**

The number of objects an average person can hold in working memory is about seven

### **Editorial equivalent of Murphy's law, according to John Bangsund**

If you write anything criticizing editing or proofreading, there will be a fault of some kind in what you have written

### **Occam's razor**

Wxplanations should never multiply causes without necessity (*Entia non sunt multiplicanda praeter necessitatem*)

### **Leslie Orgel's rules (in evolutionary biology)**

1. Whenever a spontaneous process is too slow or too inefficient a protein will evolve to speed it up or make it more efficient.
2. Evolution is cleverer than you are.

### **Papert's principle**

Some of the most crucial steps in mental growth are based not simply on acquiring new skills, but on acquiring new administrative ways to use what one already knows

### **(Vilfredo) Pareto principle**

For many phenomena 80% of consequences stem from 20% of the causes

### **(Northcote) Parkinson's law**

Work expands to fill the time available for its completion (Corollary: Expenditure rises to meet income.)

### **Peter principle**

In a hierarchy, every employee tends to rise to his level of incompetence

### **Rothbard's law**

Everyone specializes in his own area of weakness

### **(Clay) Shirky principle**

Institutions will try to preserve the problem to which they are the solution

### **Stigler's law**

No scientific discovery is named after its original discoverer.

(Named by statistician Stephen Stigler who attributes it to sociologist Robert K. Merton, making the law self-referential.)

### **Streisand effect**

The phenomenon whereby an attempt to hide, remove, or censor a piece of information has the unintended consequence of publicizing the information more widely, usually facilitated by the Internet.

### **Sturgeon's law**

Ninety percent of everything is crud

### **Thomas theorem**

If men define situations as real, they are real in their consequences

### **(Petrus Johannes) Verdoorn's law**

Faster growth in output increases productivity due to increasing returns

### **(Osmo Antero) Wiio's laws (humoristically formulated serious observations about human communication)**

- Communication usually fails, except by accident.
- If communication can fail, it will.
- If communication cannot fail, it still most usually fails.
- If communication seems to succeed in the intended way, there's a misunderstanding.
- If you are content with your message, communication certainly fails.
- If a message can be interpreted in several ways, it will be interpreted in a manner that maximizes the damage.
- There is always someone who knows better than you what you meant with your message.
- The more we communicate, the worse communication succeeds.
- The more we communicate, the faster misunderstandings propagate.
- In mass communication, the important thing is not how things are but how they seem to be.
- The importance of a news item is inversely proportional to the square of the distance.

- The more important the situation is, the more probably you forget an essential thing that you remembered a moment ago.

**Invisible law of the market**

The market is more stupid than everybody thinks



**A**



**B**



**C**