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INTRODUCTION

Economic development . . . is essentially a knowledge process . . . but we are still too much obsessed by mechanical models, capital-income ratios, and even input-output tables, to the neglect of the study of the learning process which is the real key to development.

—KENNETH E. BOULDING, 'THE ECONOMICS OF KNOWLEDGE
AND THE KNOWLEDGE OF ECONOMICS' (1966)

The development of more efficient economic organization is surely as important a part of the growth of the Western World as is the development of technology, and it is time it received equal attention.

—DOUGLASS C. NORTH, 'INSTITUTIONAL CHANGE
AND ECONOMIC GROWTH' (1971)

A MAJOR TASK for economic historians is to explain the innovation and growth that started largely in England in the seventeenth and eighteenth centuries and spread to other countries around the world. After 1700, gross domestic product (GDP) per capita increased in Europe and accelerated further upwards. Western European GDP per capita was about twenty times larger in 2003 than it was in 1700. World GDP per capita in 2003 was about eleven times larger than it was in 1700.¹

The global outcomes in terms of human longevity were spectacular. As a result of technological developments in medicine and the improved average standard of living, between 1800 and 2000 life expectancy at birth rose from a

1. Maddison (2007).

global average of about thirty years to sixty-seven years, and to more than seventy-five years in some developed countries.²

The Focus of This Book

With these huge global changes in mind, this book concentrates on the English economy from 1300 to about 1820. England was one of the major pioneers of economic development. Figure 0.1 uses data processed by Stephen Broadberry and his colleagues, showing GDP per capita for England from 1300 to 1700, and for Britain from 1700 to 1870. The figure dramatizes the huge expansion in GDP per capita from the seventeenth century. Previously there were over two hundred years of stagnation or decline in GDP per capita and in all three of its sectoral components. A sustained upward trend in GDP per capita is evident from about 1651, after the disruption of the Civil War. Much of this expansion in GDP per capita is explained by increases in industrial output. GDP per capita more than doubled from 1650 to 1820. Industrial output per whole population tripled in the same period. Agricultural output per whole population reached a peak in 1781. Its decline after 1781 was due largely to a marked contraction of agricultural employment, partly alleviated by increases in productivity. Industry had become the leading sector of the British economy.

This book considers the institutional and other changes that spurred the dramatic rise in economic activity. The impressive expansion from about 1651 to 1820 was followed by an acceleration in the growth of industrial output and GDP per capita. But the post-1820 acceleration is a topic for another study. We focus here on the foundational conditions that enabled a dramatic transition from stagnation to growth. The key changes occurred in the seventeenth and eighteenth centuries.³

From 1300 to 1600 agricultural output took up an average of about 43 per cent of GDP. After 1600 agricultural output as share of GDP trended downwards, reaching 27 per cent in 1700, 22 per cent in 1800 and 8 per cent in 1870. Rising industry took up most of the remaining share, with the service sector

2. Riley (2001), Fogel (2004), Deaton (2013).

3. Broadberry et al. (2015, 194, 227–44). Figure 0.1 shows average GDP and sectoral shares per person, i.e., GDP and sectoral outputs divided by the size of the total population. Broadberry et al. (2015, 365) also provided estimates of labour productivity. Agricultural output per agricultural worker more than doubled from 1522 to 1801 and continued increasing (albeit more slowly) into the nineteenth century.

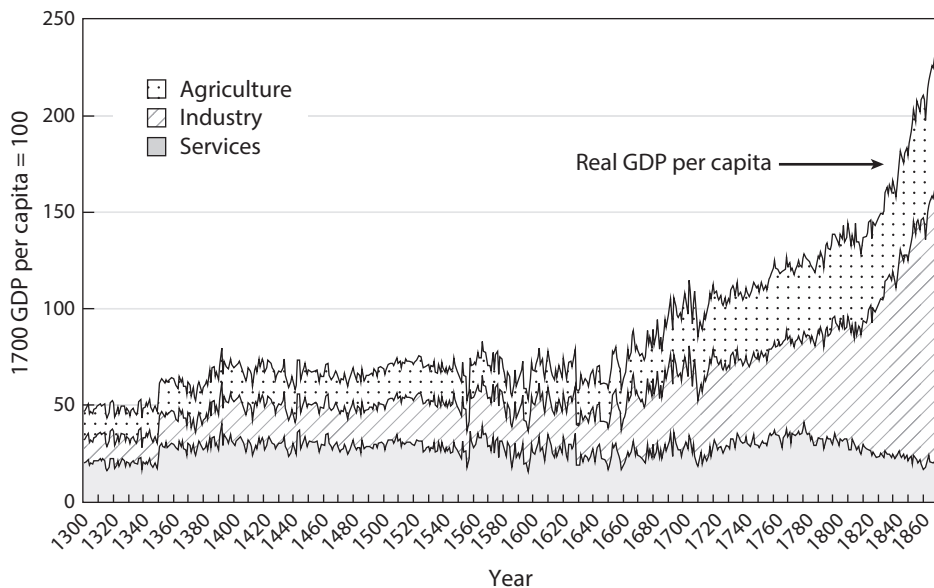


FIGURE 0.1. Sectoral shares of English/British real GDP per capita, 1300–1870
This is a stacked graph. GDP per capita is the top line, where 1700 GDP per capita is 100. Before 1700 the data are for England. From 1700 the data are for Great Britain. Data from Broadberry et al. (2015, 194, 227–44).

growing less dramatically. From 1600 to 1870 industrial output as a share of GDP trended upwards, from 37 per cent in 1600 reaching 41 per cent in 1700, 47 per cent in 1800 and 62 per cent in 1870. In the early nineteenth century, Britain became an industrial economy.

Why is England in the subtitle of this book? Some people wrongly describe the whole of the UK as England. The United Kingdom consists of Great Britain and Northern Ireland. Great Britain is made up of three nations—England, Scotland and Wales. Wales was colonized in 1536 by Henry VIII, and since then it has had the same legal system as England. The Crowns of Scotland, England and Wales became one when James VI of Scotland came to the throne in London in 1603, becoming James I of Great Britain. The Act of Union of 1707 disbanded the Scottish Parliament and brought England, Scotland and Wales under a single government from Westminster. This created a united trading area free of internal tariffs. But Scotland retained separate legal and financial institutions. From 1801 to 1922 the whole of Ireland was part of the

United Kingdom. Most of Ireland became independent in 1922, leaving Northern Ireland as part of the UK.

The census of 1851 found that England made up 81 per cent of the population of Britain.⁴ Estimates for earlier dates confirm similar degrees of population dominance by England. The principal focus in this book on England is partly justified by the physical, economic and demographic weight of that nation within Britain, and by avoiding the complication of giving separate accounts for Wales and Scotland. This does not diminish the distinctiveness and importance of these smaller nations.

Another problem is that the available datasets are sometimes for England alone and sometimes for England and Wales. For data after 1707 there is a tendency to look at the whole of Britain. So while there is a primary focus on England, data for Scotland or Wales are sometimes incorporated in the narrative. But legal changes applying to Scotland alone are generally overlooked here: they would be better addressed in a separate study.

The choices of start and end points for any historical narrative are typically arbitrary. The fourteenth century brought the Black Death, then followed a decline in classical feudalism and the growth of a market economy using wage labour. Wage labour is arguably a key feature of capitalism, so this is our starting point. A fuller account of England's modern economic development would extend to the twentieth century. But the focus of the present study is on key changes in financial and other institutions that enabled the economic take-off in the seventeenth, eighteenth and early nineteenth centuries. The Industrial Revolution is often dated from 1760 to 1820 or thereabouts. Thomas S. Ashton put it at 1760–1830, and Eric Hobsbawm pushed it up to 1780–1840.⁵ Major technological developments and important changes in financial and corporate institutions occurred after 1820, but the narrative would have to be greatly extended to incorporate them. Circa 1820 is also a useful ending point because it was just after the beginning of the century of Pax Britannica, which led to expanded trade and further British imperial expansion.

The 1820–1914 period, which saw accelerated growth and a massive further expansion of trade, warrants treatment in a separate work. It would cover an era when industrialization was consolidated, extended and promoted by new and reformed institutions. Instead, this volume focuses on the creation of the

4. Cheshire (1854).

5. Ashton (1968), Hobsbawm (1969). See also Berg and Hudson (1992)

institutional conditions that enabled the industrial take-off, and on the constraints on growth that persisted into the early nineteenth century.

Confusion over the Meaning of Capital

Financial institutions are central to the argument. Unfortunately, economic historians, with some notable exceptions, have given insufficient attention to the evolution and influence of finance. An ongoing confusion between *finance capital* and *capital goods* has diverted attention and clouded understanding. At the root of this is the peculiar usage by economists of the word *capital*, which dates from Adam Smith in his *Wealth of Nations* of 1776.

In the real world, the word has a different meaning. Even today, in everyday business and accounting usage, *capital* means a sum of money to be invested, or already invested, in material or immaterial assets. Inspired by the triumph of Newtonian science and the growing use of machines, Smith changed the meaning of *capital*. As Edwin Cannan put it, instead of the money value of property, ‘Smith makes it the things themselves.’ This decisive shift in the meaning of *capital*, from a monetary evaluation to a physical asset, has muddled social scientists ever since. It is found in the confusion of *capital goods* with *finance capital* and in the mistaken treatment of finance as a ‘factor of production.’ These confusions are sadly still commonplace in economics, sociology and elsewhere. Yet in the real world of business and accounting, *capital* still means money or the money value of alienable assets.⁶

Capital goods are useful in production, but finance produces nothing. Money is not a tool for making physical things. Money may be used to purchase factors of production, but this does not mean that finance itself does any producing. For millions of years, humans have produced things without money or finance. Finance capital—or *capital* as businesspeople call it—is historically specific. Capital goods are not.

Smith’s change of the meaning of *capital* has received minority criticism from within economics. In a work published in 1888, the Austrian economist Carl Menger made clear that economists did not have the right to ‘arbitrarily redefine popular terms’ like capital: ‘only sums of money are denoted by the above word.’ As Eduard Braun put it, Menger was of the opinion that capital must be interpreted in terms of common parlance, ‘as a homogeneous concept depicting sums of money on ordinary business accounts. In fact, he vigorously

6. Smith (1976, 282), Cannan (1921, 480).

opposed all theories that dissented from this ordinary business view on capital, including the one that is commonly imputed to him.⁷

On this point, Menger was not alone among German-speaking social scientists. Werner Sombart returned to the pre-Smithian meaning of *capital* by defining it as ‘the sum of exchange value which serves as the working basis of a capitalist enterprise.’ Similarly, Max Weber wrote that “capital” is the money value of the means of profit-making available to the enterprise at the balancing of the books.⁸

Likewise, the British diplomat and economist Alfred Mitchell Innes wrote in 1914: ‘Every banker and every commercial man knows that there is only one kind of capital, and that is money. . . . And yet every economist bases his teaching on the hypothesis that capital is not money.’⁹ The American economist Frank Fetter—who was influenced by both Austrian economics and the original institutionalism—was one of the few to attempt to restore the pre-Smithian meaning. Fetter wrote: ‘Capital is essentially an individual acquisitive, financial, investment ownership concept. It is not coextensive with wealth as physical objects, but rather with legal rights as claims to uses and incomes. It is or should be a concept relating unequivocally to private property and to the existing price system.’¹⁰ Fetter insisted that capital is both a monetary and a historically specific phenomenon: ‘Capital is defined as a conception of individual riches having real meaning only within the price system and the market where it originated, and developing with the spread of the financial calculus in business practice.’¹¹

Joseph A. Schumpeter also argued that the term *capital* should be applied to money or money values alone:

The word Capital had been part of legal and business terminology long before economists found employment for it. . . . [It] came to denote the sums of money or their equivalents brought by partners into a partnership or company, the sum total of a firm’s assets, and the like. Thus the concept was essentially monetary, meaning either actual money, or claims to money, or some goods evaluated in money. . . . What a mass of confused, futile, and downright silly controversies it would have saved us, if economists had had

7. Menger (1888, 6, 37), Braun (2015, 78; 2020).

8. Sombart (1919, 324), Weber (1968, 1:91).

9. Mitchell Innes (1914, 152).

10. Fetter (1927, 156).

11. Fetter (1930, 190).

the sense to stick to those monetary and accounting meanings of the term instead of trying to ‘deepen’ them!¹²

This advice was largely ignored. Even the Cambridge capital controversy of the 1960s and 1970s neglected the issues raised by Schumpeter and others. In their models, both sides of the debate treated capital as physical rather than financial, with Cambridge UK insisting on the heterogeneity of physical capital goods and on the problems of their aggregated measurement. Money and finance were largely left out of the picture.¹³

If Menger, Sombart, Weber, Mitchell Innes, Fetter, Schumpeter and others are broadly right on this question, then economists have subverted a central concept. They have been aided and abetted by sociologists such as Pierre Bourdieu and James Coleman. These two widened the concept of capital to include *social capital*, which, unlike *capital* in its everyday business meaning, and unlike *capital goods*, cannot be owned or sold, and it has no evident and meaningful price. Bourdieu and others expanded the meaning of *capital* further, to cover anything of social use, including social networks and interpersonal trust. These expansions fail to treat capital as historically specific, as if economics and other social sciences must be based solely on the study of universal and ahistorical laws. I try to avoid terms like *human capital* and *social capital* because they add little to the understanding of the phenomena involved, and they muddle the essentially monetary and financial meaning of *capital* proper.¹⁴

Smith’s physicalist view of the economy, and his accordant redefinition of the word *capital*, led him into trouble when dealing with money and credit. Smith did not think it possible to detach money from the metals that it was seen to represent: ‘The whole paper money of every kind which can easily circulate in any country, never can exceed the value of the gold and silver, of

12. Schumpeter (1954, 322–23). Schumpeter (1956, 174) wrote in 1917: ‘The capital market is the same as the phenomenon that practice describes as the money market. There is no other capital market.’ Schaffle (1870, 101 ff.) and Hobson (1926, 26) also argued that capital was monetary. For other dissenters, see Hodgson (2014; 2015a). To his credit, Piketty (2014) reverted to a pre-Smithian definition of capital.

13. Sraffa (1960), Harcourt (1972), Robinson (1979a), Cohen and Harcourt (2003).

14. Bourdieu (1986), Coleman (1988). As Piketty (2014) pointed out, waged workers are not capital because they cannot be used as collateral, and they do not appear as assets on the firm’s balance sheet. By contrast, slaves can be mortgaged: they are literally human capital, and the term was first used in that context (Hodgson, 2014).

which it supplies the place.’ Henry Thornton criticised Smith’s views on money and credit in 1802, arguing that the Scottish economist had failed to consider possible variations in the velocity of circulation of money and the wide range of paper assets in circulation. Thornton also pointed out that banks are important not only because they mobilize finance capital, but also because, by supplying paper money or bills, they can create credit. This additional credit adds to the amount of finance available. Thornton thus hinted, like Schumpeter much later, that credit can defy the then-assumed physical laws concerning the conservation of matter and energy and create more value, as if ‘out of nothing’. A physicalist ontology is inapplicable to finance.¹⁵

Capital, Capitalism and the Neglect of Finance

Up to about 1990, the conventional wisdom, including from orthodox economists at the World Bank to heterodox economists at Cambridge UK, was that investment in capital goods was a leading factor in economic development. Finance was simply a means to that end. Addressing the causal relation between the two, the heterodox Cambridge economist Joan Robinson proposed that ‘where enterprise leads finance follows’. H. John Habakkuk argued similarly that financial institutions grow up to satisfy any large need for finance. The accumulation of capital goods was primary. Finance would take care of itself.¹⁶

This widespread view was undermined by arguments and empirical work by a number of authors. For example, William Easterly attacked the ‘capital fundamentalism’ of approaches to economic development that put priority on investment in capital goods. Using the standard production function $Q=f(K, L)$, ‘capital fundamentalism’ upholds the supreme importance of K , which refers to capital goods, not to finance. Easterly showed that, within a production function approach, the impact of K is limited. He argued that ‘increasing buildings and machinery’ is not the prime cause of growth. He collaborated with Ross Levine in publishing a survey of the evidence that

15. Smith (1976, 300). There are conflicting interpretations of Smith’s views on money (Currott, 2017), which cannot be resolved here. See Thornton (1802, 44–46, 53–58, 176–77), Schumpeter (1934, 73). On how bank credit creates money, see Robertson (1928), Moore (1988), Minsky (1991), McLeay et al. (2014), Werner (2014), Jakab and Kumhof (2015), Keen (2022).

16. Robinson (1952, 86; 1979b, 20), Habakkuk (1962, 175), Pollard (1964).

similarly undermined the role of K (capital goods) in development. They made it clear that they were rebutting the claim that ‘physical capital accumulation’ was paramount. Their argument about finance is different. One of their conclusions is that ‘a higher level of financial development boosts economic growth’, particularly by aiding innovation. Other studies have also underlined that finance capital remains important for economic development. The effects of finance capital and capital goods on economic development are very different.¹⁷

Deirdre McCloskey supported Easterly’s attack on ‘capital fundamentalism’. But while Easterly criticized explanations centred on capital goods (factors of production), he did not attack those focusing on finance capital. McCloskey ignored this difference and misleadingly cited Easterly and others in her attempt to rebut Schumpeter’s claim that finance capital is vital. Easterly, and especially his collaborator Levine, supported the Schumpeterian idea that finance is important for development. McCloskey’s argument exhibits a confusion between two very different meanings of *capital*.¹⁸

McCloskey saw *capitalism* as referring to the accumulation of capital goods, or ‘piling brick on brick’ as she put it. On this basis she rejected the word *capitalism*. Of course she is right that economic growth is much more than the piling up of bricks or machines. But she did not consider that the word *capitalism* might better refer to *capital* in the sense of finance, and not primarily to the accumulation of physical objects.¹⁹

The confusion has led to different outcomes. Using historical case studies, Bas van Bavel developed an ambitious thesis about economic development. He argued that economic systems involving ‘factor markets’ in ‘land, labour, and capital’ experience cycles of expansion and decay. Van Bavel insisted: ‘Everything that is necessary for human life is made by combining the three factors of production: land, labour, and capital.’ *Capital* (presumably capital goods) is thus omnipresent in human history. But van Bavel shifted meanings in a footnote: ‘When factor markets are discussed . . . this concerns the land market . . . the labour market . . . and the credit market (the borrowing of capital for a specific period).’ Throughout the book, *capital* generally refers to

17. Blomstrom et al. (1996), Easterly (2001, 47–50), Easterly and Levine (2001, esp. 177–78, 211), Levine (2005), Beck et al. (2003), Rousseau (2003), Carlin and Mayer (2003), Sarma and Pais (2011), Kendal (2012), Hebllich and Trew (2019), Raghutla and Chittedi (2021).

18. McCloskey (2010, 132–39), King and Levine (1993).

19. McCloskey (2016b, 93).

money and finance, and less to capital goods. Van Bavel first treated capital as a ‘factor of production’ and then, for most of the book, as finance. Financial markets are mistakenly described as factor markets. But money and finance are not productive instruments. They grow no crops. The relevant productive resources are capital *goods*, alongside land and labour. Capital goods have existed since our prehuman ancestors picked up sticks or stones and used them as tools. But finance capital is only a few thousand years old, and it is of supreme importance in the modern era only.²⁰

For these mistaken reasons, van Bavel shared McCloskey’s distaste for *capitalism* as a description of a historically specific era. While the arguments of McCloskey and van Bavel are different, these two authors reveal the problems caused by the persistent ambiguity and Smithian distortion of the term *capital*. They also show how confusion on this key concept leads to challengeable rejections of the term *capitalism*. Such conceptual errors are widespread in economic history. Several other instances are revealed later.

Consider another example of the neglect of finance. In a stimulating book addressing the institutional and other long-term preconditions of the Industrial Revolution, Jan Luiten van Zanden drew inspiration from the stress on knowledge and the cumulative development of skilled labour in endogenous growth theory. Accordingly, endogenous growth theory has helped to shift the emphasis from *K* to *L*. Inspired by these models, van Zanden concentrated on the growth of knowledge production in pre-industrial and industrial Europe. He provided impressive evidence on the expanding production of manuscripts, the spread of printed books, the growth of literacy, increasing female participation in the labour market, the development of skills and the expansion of the knowledge economy.²¹

But although there is an emphasis on the role of institutions throughout van Zanden’s book, institutional changes are often treated as parametric rather than structural. Omitted are factors that do not appear as key variables in standard versions of endogenous growth theory. This puts the modelling cart before the horse of historical investigation. But it is mostly up to historians to tell modellers what is important, not the other way round. Seemingly because much of endogenous growth theory says little about financial institutions, these features are neglected. Accordingly, neither banking, credit nor finance

20. Van Bavel (2016, 1–2), Hodgson (2021a).

21. Romer (1994), Aghion and Howitt (1998), van Zanden (2009).

appears in the index of his volume. There is no consideration of major institutional developments that led to the growth of finance during the Industrial Revolution. They are simply ignored.²²

The term *capital market* appears a few times in his book. These and other markets are treated as eternal verities, with the focus on improving their efficiency, not on the processes of their institutional creation, nor on the creation of property rights that are alienable and thus tradeable on markets. Misled by prestigious mathematical growth models that overlook finance, van Zanden neglected these crucial institutional developments.²³

On the contrary, finance is vital. If we regard capital as money or finance, and neither a factor of production nor a capital good, then the historical specificity of capitalism is sustained by the unique features of modern financial institutions. Developed financial institutions make capitalism historically specific. Hence the use of the word *capitalism* in this book and its subtitle signals the importance of those modern financial arrangements.

An opposite error exists. While some economic historians reject the *capitalism* label for unsound reasons, others apply it too broadly, thus diluting its meaning. Both Marxist and non-Marxist economic historians have associated capitalism and capitalists principally with commercial trade and profit-seeking, sometimes with the additional criterion of wage labour. (Some examples are given in the following chapter.) But trade and profit-seeking have both existed for thousands of years. This might suggest that capitalism too has existed for millennia. Even if we add wage labour as a criterion, waged employment was widespread in England from the early fifteenth century. These criteria make capitalism at least six centuries old, and they are insufficient to demarcate capitalism as a finance-driven system that was actually consolidated in England in the eighteenth century. Finance was not the only institutional development that then mattered. But the role of finance has been silenced in part by an enduring confusion over whether the word *capital* refers to financial capacity, or to non-monetary assets, including physical stuff.

22. Finance is mentioned only briefly in the mammoth Aghion and Howitt (1998, 71) textbook on endogenous growth theory. Van der Ploeg and Alogoskoufis (1994) developed an endogenous growth model where increases in the money supply can stimulate growth. Laeven et al. (2015) introduced a more substantial financial sector in their endogenous growth model, where financial innovation is as vital as technological advance.

23. Van Zanden (2009, 24, 100, 104, 131, 140, 222–23, 295), Hoffman et al. (2019).

Defining Capitalism

Once we understand *capital* primarily as finance and not goods, then it is reasonable to describe what was developed in Britain in the eighteenth century as *capitalism*. Finance is definitionally central to this system. As Schumpeter pointed out, ‘Capitalism is that form of private property economy in which innovations are carried out by means of borrowed money, which in general . . . implies credit creation.’ Money is often borrowed on the basis of collateral. Schumpeter also emphasized ‘the importance of the financial complement of capitalist production and trade.’ Hence ‘the development of the law and the practice of negotiable paper and of “created” deposits afford perhaps the best indication we have for dating the rise of capitalism.’ As Geoffrey Ingham summarized: ‘Capitalism is distinctive in that it contains a social mechanism by which privately contracted debtor-creditor relations . . . are routinely monetized.’²⁴

The role of taxonomic definitions is not to describe or analyse, but to list the minimum number of essential features that can successfully demarcate one kind of entity from another. Capitalism can be defined as a social formation with the following five features:²⁵

1. A legal system supporting widespread individual rights and liberties to own, buy, and sell private property
2. Widespread commodity exchange and markets, involving money
3. Widespread private ownership of the means of production, by firms producing goods or services for sale in the pursuit of profit
4. Widespread wage labour and employment contracts
5. A developed financial system with banking institutions, the widespread use of credit with property as collateral, and the selling of debt

24. Schumpeter (1939, 223). Schumpeter (1954, 78 n.) dated the rise of capitalism to the sixteenth century. But modern mortgaging rules were not established in England before the 1670s, and secure markets for debt were consolidated only after 1750 (see Hodgson 2021b and this text below). The final quotation is from Ingham (2008, p. 73).

25. See Hodgson (2019a) on taxonomic definitions. Previously I suggested a definition of capitalism with six features, including ‘much of production organized separately and apart from the home and family’ (Hodgson, 2015a, 20, 259, 385). This criterion was inspired by Weber. But Chinese family firms and the COVID-19 pandemic show that businesspeople are capable of efficient work and rational pecuniary calculation even when they are in their home and family environments. Weber’s point was important, but it is not vital for an effective taxonomic definition of capitalism. I now think that, in the interests of parsimony, the ‘apart from the home and family’ feature can be removed, while doing little harm to the remaining integrity or value of the definition.

To emphasize, the task of a taxonomic definition is demarcation, rather than to provide an adequate or complete description or analysis. Important aspects of capitalism in history are omitted from the definition, including the role of violence, slavery and imperial conquest. Such features were also present in pre-capitalist societies, albeit often on a smaller scale. Despite their historical importance, they do not demarcate capitalism from non-capitalism. Capitalism can exist without imperial conquest or slavery, and arguably with much diminished violence. We understand their importance via historical analysis, not by their placement in the taxonomic definition itself.

There are important features of English and other capitalisms that are not included in the five-point definition. All capitalisms rely a great deal on the intervention of the state. But the point about taxonomic definitions is not to include everything necessary for a type of phenomenon to exist. The point is to provide parsimonious but adequate criteria of demarcation. English capitalism was built on empire and slavery. But several other capitalisms were different in these respects. State intervention and slavery are examples of *impurities* within capitalism. Impurities can be necessary or contingent for the system. Some state intervention was arguably necessary, but slavery was not. Accounts of real existing capitalisms should refer to their major impurities. But they do not have to be part of the taxonomic definition. Analysis, description and definition are not the same.

Returning to the five-point definition of capitalism, the first three criteria are necessary but insufficient. Private ownership, money and markets have existed for thousands of years. We need more than these three criteria to pin capitalism down. But they are necessary, because any society lacking one or more of them would not be capitalist.

Marx emphasized widespread wage labour and employment contracts as an additional definitional feature of the capitalist mode of production. But because extensive wage labour stretches back to the early fifteenth century, it is less useful for marking the beginning of capitalism. Nevertheless, widespread employment contracts are still an important feature of all modern economies, and their widespread replacement by (say) worker cooperatives or self-employed entrepreneurs would mark a radical system change. Hence, by this logic, the end of wage labour could mark the end of capitalism.

As noted earlier, Schumpeter emphasized the fifth and final criterion, involving developed financial institutions including credit and the sale of debt. It provides a much better means of identifying the emergence of capitalism. As elaborated in later chapters of the present book, such financial institutions

became prominent in England in the eighteenth century. We can date the birth of capitalism in England from sometime in the seventeenth or eighteenth centuries, coinciding with upward trends in industrial output and GDP per capita, as noted in figure 0.1.

Financial institutions enable the raising of money for innovation and investment. But economists have paid insufficient attention to the institutional conditions required to mortgage assets or otherwise use them as security for loans. For example, in ‘the economics of property rights’—as developed by Armen Alchian, Yoram Barzel and others—property is regarded as mere possession or control. Legal title is seen as significant only if it aids control of an asset. Otherwise, ‘property’ is simply what you control, and you can have a ‘property right’ even if you have stolen it. Critics point out that de facto possession does not necessarily constitute a *right*. This dismembered view of property ignores its multifaceted legal nature. Possession (*usus*) is only part of the real story. Ownership is not simply a matter between buyer and seller, but it requires some legal authority. As John R. Commons put it: ‘In the end, the actual title to property rests on the sovereign power of the state to enforce its decrees.’ Neglecting this question of legal title, the ‘economics of property rights’ places no emphasis on the possible use of property as collateral. But such legal issues are vitally important for economic development.²⁶

It is shown in this book that the mortgaging of English land was inhibited by legal constraints and was rare before the seventeenth century. More widespread mortgaging began around 1670, growing thereafter and making more finance available. This again gives us a historical marker of the beginnings of capitalism in England. Institutionally grounded and historically specific concepts of *property* and *capital* are essential to understand modern economic development.

Reconceptualizing the Economics of Production and Innovation

We think with the aid of metaphors. The metaphors of much of economics—classical, Marxist, Sraffian and neoclassical—have been generally physical in nature. This applies to the $Q=f(K, L)$ production function and its more

26. On the ‘economics of property rights’, see Alchian (1965), Furubotn and Pejovich (1972), Barzel (1989). The concepts of collateral and mortgage are absent from these works. For contrasts and criticisms, see Honoré (1961), de Soto (2000), Cole and Grossman (2002), Steiger (2006, 2008), Heinsohn and Steiger (2013), Hodgson (2015a, 2015b, 2015c), Arruñada (2016). The quote is from Commons (1893, 110).

sophisticated descendants, including endogenous growth theory. It also applies to the representation of the economy as an input-output matrix, including the Sraffian (Cambridge) formulation, where capital goods are heterogenous and labour can be too. These all invoke metaphors of physical stuff, with labour as a vital force to move and transform it.²⁷

The problem of the heterogeneity of capital goods never goes away. In any modern economy there are millions of commodities. Even with production functions or matrices with heterogenous capital goods, the theory has to be simplified to deal with this. It is necessary to combine groups of things, to avoid the problem of addressing equations with millions of variables. Different things must be aggregated via some vector of their values. There is always the temptation to use prices. To make it measurable, physical stuff becomes monetized. Finance enters the production process by the back door. The lure is then to conflate finance with capital goods, or to treat them as moving in parallel with one another. But when relative prices change, aggregation by price becomes doubly problematic.

There is also the problem of dealing with technological innovation, which concerns unknown future technologies. It is widely accepted that innovation is central to economic growth, but the physical metaphor of the production function, assuming known inputs of capital goods and labour, within a fixed structural form, has difficulty dealing with future technology in an adequate manner. Innovation is often treated as manna from heaven, leading to unexplained shifts in the function itself.²⁸

Some economists assume that innovation is a process where agents estimate their expected returns from different types of investment; they make choices between them and adjust their expectations as further information is revealed. This depiction assumes away uncertainty (where, by definition, probabilities are incalculable) and replaces it by risk (which means that probabilities are calculable). Long ago, Frank Knight and John Maynard Keynes distinguished risk from uncertainty. When uncertainty is present, we cannot depict learning or discovery as probabilistic, and subject to a standard rational calculus. Frank Hahn pointed out that the concept of 'rational learning' is problematic. As North wrote: 'It is necessary to dismantle the rationality assumption underlying economic theory in order to approach constructively

27. Robinson (1953), Solow (1956, 1957), Sraffa (1960), Leontief (1966), Harcourt (1972), Romer (1994), Aghion and Howitt (1998).

28. Dosi et al. (1988).

the nature of human learning.' Learning and innovation are not processes whereby agents can maximize calculable expected returns.²⁹

Future knowledge is uncertain and unknowable. Too often the uncertainties surrounding innovation and events in the future are forced into a probabilistic framework. Economists give priority to mathematical models, which require probabilistic estimates. Learning is not simply an individual acquiring new information. It is about individuals and communities discovering or creating new knowledge in highly complex circumstances with radical uncertainty. Invention and innovation are leaps into the unknown.

The physical metaphor of the production function diverts our attention from the actual processes involved. As Axel Leijonhufvud wrote, the production function approach is 'more like a recipe . . . where ingredients are dumped in a pot. . . . This abstraction from the sequencing of tasks . . . is largely responsible for the well-known fact that neoclassical production theory gives us no clue to how production is actually organized.' We must understand production and innovation as relational, transformative processes, not as inputs into a static function.³⁰

To make progress we need to consider the knowledge held by the producers, based on their experience of what works and of the difficulties or constraints. Much of this knowledge is in the form of rules. For example, 'every Monday morning this machine should be oiled and tested'. This is a working technological rule, relating to the design of the machine and to the pattern and circumstances of its use, and depending in part on the laws of physics and chemistry. Much of technological knowledge consists of rules.

Another example of a rule would be that 'if you are late by more than ten minutes in the morning, then £10 will be deducted from your pay'. This is an institutional rule, intended to motivate workers to turn up promptly. It may result from some (true or false) notion of how people are motivated. It may or may not serve its purpose, but a key feature is the extent of its arbitrariness. Unlike the rules emanating from the laws of physics and the design of a machine, the penalties could be smaller or bigger, or non-existent, or non-pecuniary, or whatever.

Hence there are technological rules and institutional rules. The former are heavily constrained by physical laws; the latter are often more malleable (although constrained by culture, nature and social practicalities). Some

29. Knight (1921), Keynes (1921, 1936, 1937), Hahn (1991, 49), North (1994, 362).

30. Leijonhufvud (1982, 203).

institutional rules depend on legislated laws (the other meaning of *law*). Legislation can be changed, although it is often costly to do so. Many other institutional rules are not necessarily juridical laws, including rules of communication (language), rules governing behaviour in organizations, cultural rules, and so on. Again, there are different degrees of difficulty in establishing or changing them.³¹

Accordingly, we should understand economic innovation and development as centred on the changing and creation of rules—both technological and institutional—and the spreading and assimilation of knowledge of these rules among those engaged with the processes involved. This entails an alternative ontology of rules and rule-systems, serving as a rival to the physicalist view of the economy as evidenced in production functions. The emerging ontological fundamentals involve technologies, institutional structures and algorithmic learning processes, made up of programs or systems of rules. As Kurt Dopfer, John Foster and Jason Potts put it: ‘An economic system is a population of rules, a structure of rules, and a process of rules.’ Rules are the basic operational units in evolving social systems. For an individual or group, a prominent rule provides a normative guide for thought or action. Knowledge of a prevalent rule provides an imperfect but often necessary means of predicting the behaviour of others.³²

Knowledge is an adaptation to circumstances. It is often acquired through social interaction. It becomes ingrained in habits. It involves a tacit or codified rule structure, subject to triggers and stimuli, often in organizational or other social contexts. Organizational knowledge is an emergent property of

31. There is a near-consensus that institutions are defined as systems of rules (Rowe, 1989; North, 1981, 201–2, 1990a; Ostrom, 1990; Knight, 1992; Crawford and Ostrom, 1995; Mantzavinos, 2001). This suggests that organizations are a kind of institution (Kornai, 1971; Parsons, 1983; Giddens, 1984; Scott, 1995; Miller, 2010; Guala, 2016). Despite a widespread belief, there is no clear evidence that North took a different view (Hodgson 2006, 2019a). When North (1990, 4) made a ‘crucial distinction . . . between institutions and organizations’, he may have implied, but did not clearly state, that they were mutually exclusive. Institutions and organizations are definitely different concepts, just like mammals and humans. North (1981, 18–19) more than once implied that organizations were institutions. Barzel (2002, 14n.), Dam (2006b, 22–23) and Faundez (2016) have criticized the stance that organizations are not institutions.

32. Dopfer et al. (2004, 263). See also Arthur (2006), Crawford and Ostrom (1995), Dopfer (2004), Dopfer and Potts (2008), Hodgson (1997, 2004, 2007, 2019b), Hodgson and Knudsen (2004), Holland et al. (1986), Ostrom (2005), Parra (2005), Potts (2000) and Vanberg (2002, 2004).

structured and shared individual knowledge. It depends on the existence of routines that can trigger behaviours as a result of interactions within the group. Just as individuals develop knowledge to deal with adaptive problems, organizations too are problem-solving entities. They are ‘epistemic communities’ and ‘machineries of knowing’.³³

Production is a goal-oriented process involving purposeful individuals. Both manual and mental labour involve the development of habits. Production is purposeful, problem solving and informational, played out on the register of material things. Production is organized in terms of structures and networks that process, filter and screen large amounts of information, which can be used to help generate useful knowledge. Production is informational as well as physical.

We may define *information* very broadly, in the famous sense of Claude Shannon and Warren Weaver, where a message has ‘information content’ when its receipt can cause some action. The information consists of signals with the potential to be retained, used by the receiver or communicated to others. This definition does not mention meanings and interpretations. This does not mean that they are unimportant. It is a mistake to think that taxonomic definitions must include every vital feature. The advantage of the Shannon-Weaver definition is that it highlights the rule-like structure (if in receipt of signal *X*, then carry out action *Y*) of a piece of information. This applies to genetic information and computer algorithms as well. When we discuss human social evolution, then, it is essential to bring meanings and interpretations into the picture, and to establish a richer concept of human knowledge that fully involves them.³⁴

The informational mechanisms involved in socio-economic evolution are conditional, rule-like structures that are made up of habits of behaviour and thought that are ingrained in individuals and harboured in groups and organizations. They may be communicated using ideas, body language and other stimuli. We are not fully aware of some of the rules that we habitually follow. Much knowledge is unavoidably tacit and unavailable. The transmission of

33. For a selection of the large relevant literature, see Reber (1993), Plotkin (1994), Nonaka and Takeuchi (1995), Hendriks-Jansen (1996), Clark (1997), Wenger (1998), Keijzer (2001), Beinhocker (2006), Nonaka et al. (2006), Collins (2010), Knudsen et al. (2012), Luo et al. (2012), Gascoigne and Thornton (2013).

34. Shannon and Weaver (1949), Hodgson and Knudsen (2010, 123–27), Hodgson (2019a).

tacit knowledge is difficult. It often requires close study, social interaction and repeated practice.³⁵

In modern economies, production is a materially grounded information system that is tied up with key institutions such as property and contract. They function as information registries of what is produced and owned, and of rules governing their use and allocation. In earlier societies, custom and tradition would play these informational roles. Any complex economy is a structure of organisations and sub-organisations, each subsystem playing its role in storing and processing information in habits, customs and routines.

This is a paradigm shift away from the physical metaphors that still infuse mainstream economics, as represented by production functions, maximising behaviour and other key concepts. Instead we need to develop another metaphor, where the processing, retention and replication of information, in complex and uncertain contexts, is central. This information-based metaphor admits an evolutionary perspective, using principles of variation, selection and inheritance, synthesized with notions of entropy and negentropy taken from thermodynamics, and with insights from the study of complexity. The kind of evolutionary thinking signalled here is arguably better placed to deal with issues such as adversity, conflict, cooperation, innovation, variety, complexity and uncertainty, which are all central to historical processes.³⁶

Paradigm shifts are notoriously difficult to accomplish. As Thomas Kuhn, Michael Polanyi and Donald T. Campbell all pointed out, they meet the ingrained resistance of any organized academic discipline, with many good scientists habituated in old ways of thinking and with vested interest in the status quo. As Max Planck observed, sciences often progress not by persuasion, but by a new generation taking over as their elders die. Science advances, funeral by funeral.³⁷

35. Polanyi (1966), Lave and Wenger (1991), Reber (1993), Cohen and Bacdayan (1994), Hutchins (1995), Nonaka and Takeuchi (1995), Lane et al. (1996), Clark (1997), Collins (2010).

36. On the roots of neoclassical economics in physics, see Mirowski (1989). For relevant modern evolutionary approaches, see Georgescu-Roegen (1971), Holland et al. (1986), Wicken (1987), Plotkin (1994), Depew and Weber (1995), Corning (2003, 2005), Beinhocker (2006), Mayfield (2013) and Wallast (2013).

37. Kuhn (1962), Polanyi (1962), Campbell (1969), Hodgson (2019d, chaps. 6–7). Planck (1949, 33–34) wrote that ‘a new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it’. This was quoted by Kuhn (1962, 150) and reportedly

Some seeds of this paradigm shift in economics were sown long ago. Alfred Marshall emphasized that knowledge ‘is our most powerful engine of production’ and that organization is an ‘agent of production’ that ‘aids knowledge’. Thorstein Veblen noted the abuse of physical metaphors in economics and stressed the importance of habitual knowledge and evolution. Friedrich Hayek and Kenneth Boulding attempted to put knowledge—including its discovery and distribution—at the centre of economics.³⁸

But grand sentiments about the informational paradigm and evolutionary analysis are not enough. The advantages of a shift in the required direction have to be demonstrated by detailed studies of concrete phenomena. In economic history and economic development, empirical evidence and its application have played a major role. A hope of this work is to show that changing some underlying principles may be of some significant help in improving both analysis and policy in these areas.

Scope and Content of This Book

My book on *Conceptualizing Capitalism* attempted to establish clear meanings of *capital* and *capitalism*, and to stress the nature and importance of such features as money and property rights. The present book is more about the detailed causes behind the rise of capitalism and of the Great Enrichment—to use McCloskey’s term. *Conceptualizing Capitalism* is more about the ‘what?’; this book is more about the ‘why?’ and the ‘how?’

Marx was one of the first authors to write on the structures and dynamics of capitalism. We can still learn a great deal from him, even if several of his arguments are flawed. Chapter 1 is an appraisal of the Marxist theory of history. There are severe difficulties in the Marxist class analysis of historical change. It is argued here that institutions rather than classes are fundamental. The legal system is one of these institutions, which Marx erroneously regarded as part of the ‘superstructure’, somehow reflecting the (vaguely defined)

summarised with the distinctive ‘funeral by funeral’ wording in a 1975 *Newsweek* article by the economist Paul Samuelson.

38. Marshall (1920, 138–39), Veblen (1898a, 1898b, 1898c, 1906a, 1908a, 1908b, 1908c), Hayek (1948), Boulding (1966). On Veblen and Marshall on knowledge and evolution, see, respectively, Hodgson (2004, chaps. 7–8; 2013b). Endogenous growth theory (Romer, 1994; Aghion and Howitt, 1998) has put much more stress on the growth of knowledge and skill-creation, but it has placed this in the production function framework.

‘economic’ foundations beneath. But the ‘economic’ sphere itself relies on law to constitute some of its basic social relations and structures.

Chapter 2 reviews a selection of other explanatory approaches. Several authors have seen technology as the driver of change, with institutions following and adjusting in its wake. Some statements by Marx suggest this. Similar views are found in the writings of William Ogburn, Clarence Ayres, Erik Reinert and Justin Yifu Lin. Of course, without technological innovations there would have been no Industrial Revolution and no Great Enrichment. But the development of technology and its application require institutions. Most basically, the institution of language is required for communication. More particularly, there must be sufficient political freedom of enquiry. Science must be organized to consolidate, test and adapt ideas. In modern economies, financial institutions and business companies must be there to raise money for investment and to empower productive activity.

Also discussed in chapter 2 is Weber’s claim that the Protestant ethic stimulated the capitalist spirit. Recent empirical research suggests that the likely chain of causality is that Protestantism gave greater encouragement to literacy, which then in turn aided innovation and economic growth. McCloskey likewise emphasized ideas but highlighted liberalism rather than Protestantism. She suggested that institutions did not change very much from the seventeenth to the nineteenth century. But liberalism grew in influence. Her claim of institutional stasis is countered at length below, by pointing to several major institutional changes in the seventeenth and eighteenth centuries, particularly in the financial sector. Joel Mokyr also emphasized ideas, but he focused on those that gave rise to modern experimental, practically oriented science and technology. He spotlighted ‘intellectual entrepreneurs’ such as Francis Bacon and Isaac Newton. But in contrast to McCloskey, he accepted a role for institutions in his explanation. He also placed the cultural advance of ideas in a Darwinian evolutionary framework.

Mokyr briefly considered the role of exogenous pressures and disruptions, alongside endogenous processes of institutional and technological development. Exogenous shocks (coming from outside a politico-economic system) are emphasized in the present work. Many of these shocks involved war. By contrast, writers including Marx and Schumpeter emphasized development ‘from within’ and paid less explanatory attention to external shocks. By contrast, external disruptions and conflicts, and their role in the development of European states, are a major theme of the work of Charles Tilly, and some of his insights are used in this book. But Tilly treated capital as *capital goods*

and thus gave an inadequate account of the role of financial institutions in economic development. Nevertheless, exogenous shocks have to be considered alongside the complex dynamics of national systems.³⁹

Chapter 2 is not intended to be exhaustive. Other important contributions, including by Douglass North, Daron Acemoglu, Francis Fukuyama and others, are considered later in the volume, in the context of explaining particular historical developments.⁴⁰

Part 2 looks at historical developments in detail. Chapter 3 begins with the exogenous shock of the Black Death, which killed about half the English population and undermined key feudal institutions. After the end of serfdom, there were changes in landowning rights, including the introduction of copyhold tenure. The need to mobilise the rural population in the case of war was a major reason why the Tudor monarchs curbed enclosures and gave yeoman farmers some legal protection. Consequentially, the logic of economic growth was not entirely commercial. Exogenous and military matters greatly affected development.

The Reformation and the Dissolution of the Monasteries were highly disruptive, in religious, political and economic terms. The Dissolution created new landowners. Henry VIII revived some of their feudal obligations, to raise further revenues for war. The early Stuart monarchs had similar problems raising money for military purposes. Conflicts with Parliament over this led to the Civil War of 1642–51. The Protectorate under Oliver Cromwell abolished the feudal provisions reintroduced by Henry VIII. At the behest of the large landowners, the Restoration government quickly reaffirmed their abolition in 1660. The Stuart governments of Charles II and James II also furthered the interests of the big landowners, including by a crucial reform of mortgage law in the 1670s.

Chapter 4 looks at the impact of the Glorious Revolution of 1688 on British economic development. Contrary to some authors, the constitutional settlement of 1689 did not lead to significant changes in the nature and security of

39. Hodgson (1989, 1996, 2015a) stressed the importance of both exogenous and endogenous disruptions in economic development.

40. North had an extraordinary, virtuous capacity to admit sometimes that his critics were right, and to modify creatively his arguments in response. This led to a corpus of work that adapted and evolved; hence it is difficult to summarize briefly. Perhaps partly because of his shifting arguments, his work has more than a fair share of imprecision of meanings of key terms (Hodgson, 2006, 2017a, 2019a).

property rights. But the *de facto* balance of power between Crown and Parliament shifted in the direction of the latter. The effects of 1688 were international as well as domestic. The Glorious Revolution overturned Britain's alliances with France and Spain. After wars with the Dutch in 1652–54, 1665–57 and 1672–74, the Dutch United Provinces became Britain's foremost ally. This led to over a century of global war, interrupted by short periods of peace. The needs of war, combined with the new working accord between Crown and Parliament, led to major revolutions in British financial institutions and state administration. A new financial system developed with the Bank of England at its core, alongside a growing number of private banks. Extensive state borrowing was partly financed by loans from private banks and the sale of state bonds and annuities. Further measures had to be introduced to extend markets for debt and to increase borrowing. To finance the sinews of war, the national debt soared skywards. Waves of parliamentary enclosures after 1750 led to the consolidation of large estates. Inequalities of wealth and income increased. These changes were more important for the Industrial Revolution than the constitutional settlement of 1689. Financial innovations, developed in the crucible of war, were paramount.⁴¹

Having established the importance of financial institutions for economic development, and charted their evolution into the eighteenth century, the book considers in chapter 5 the possibility that the limited availability of finance remained a constraint on growth during the Industrial Revolution. It questions the prominent argument that there was 'no shortage of capital' for entrepreneurs at that time, and that they could rely on family and friends if any finance were needed. Against this, there is evidence to suggest that finance was inadequate, and the relatively underdeveloped state of the banking and financial system restricted economic growth. Specific cases, such as the famous partnership of Matthew Boulton and James Watt, show that their enterprise was held back for lack of finance, especially in its early years. Entrepreneurs often relied on the country banks, which were legally limited in size to six partners and highly vulnerable to financial shocks. Mortgaging was inhibited by a lack of a national land registry and by other factors. Nevertheless, there

41. Although this explanation of the British economic take-off has clear precedents in the work of Commons, Schumpeter and others, it is still neglected. For example, in their excellent text on the role of institutions in economic development, Koyama and Rubin (2022) list several explanations of the British Industrial Revolution. Novel financial institutions are not mentioned.

was sufficient finance to enable a major industrial transformation. The importance of financial institutions is thus underlined by both this positive achievement and by the financial constraints under which it operated. The chapter calls for more empirical research to get a more accurate picture.

Part 3 underlines some lessons from the analysis and makes some further points. Chapter 6 draws from psychology, philosophy and elsewhere to consider the conditions under which agents are impelled to try to solve pressing problems, during their struggles for power, wealth or recognition. Agents make decisions and act in ways that may promote or constrain socio-economic change. The basic argument is that disruptions of various kinds can bring emotional, cognitive and deliberative challenges, plus opportunities for individuals, families and organizations. These interruptions to habituated behaviour and daily routine pose problems that require some kind of resolution. Attempted problem solving takes place in a context of uncertainty and complexity. Posited solutions may draw on religious, scientific or other ideas to frame or justify an action. A variety of solutions may be tried. Conscious or unintended processes of selection may determine which of these solutions persist through time. By undertaking and responding to new actions, people establish new habits and routines, and socio-economic change is accomplished.

Ideas are still important in this account because they are used to rationalize and communicate current and changing activities. People are motivated by ideas, but their adoption must also be explained. Ideas and beliefs are founded on habits that are formed in particular social contexts. As the philosopher Charles Sanders Peirce put it, the 'essence of belief is the establishment of habit'. By contrast, 'ideas first' or 'mind first' explanations ignore the need to address and explain the processes through which ideas are selected and adopted. These accounts are often based on a mistaken 'folk psychology', where ideas and beliefs are seen as the primary sources of intentions, preferences, choices and actions.⁴²

Ideas-first explanations have problems explaining the origins of ideas. Fortuitous mutations of ideas are not enough. But some accounts, particularly that of Mokyry, point also to impulses to solve pressing practical problems. If this perspective is broadened to include disruptions to ongoing behaviour, adaptive responses and changes to underlying habits, then our explanations

42. Peirce (1878, 294), Dewey (1922), Bunge (1980), Stich (1983, 1996), P. M. Churchland (1984, 1989), P. S. Churchland (1986), Damasio (1994), Rosenberg (1995, 1998), Rudolph et al. (2009).

no longer rely on ideas alone. Instead of an atomistic perspective that concentrates on individuals and their ideas, we need also to consider social relations, and the interactions of individuals with others in changing environments.⁴³

We pay particular attention to legal institutions. Legal institutionalism involves four basic ontological claims. First, rules (including legal rules) infuse human society. Systems of rules support structures of power and perception, providing some social coherence and cognitive guidance. Second, law (in its most developed sense) necessarily involves both the state (broadly the realm of public ordering) and supportive private or customary arrangements. Reduction of law to either private (customary) or public (state) aspects alone is mistaken. This applies to systems of common law, as well as to civil or statute law. Law involves an institutionalized judiciary and a legislative apparatus. Third, law accounts for many of the powerful rules and structures of modern capitalist society. Consequently, law is not simply an expression of authority but is also a constitutive part of the institutionalized power structure, and a major means through which control is exercised. Fourth, law is a great motivational force. It works not simply through threat of punishment but also because of commitments to what is perceived as legitimately sovereign. Law builds on cultural (and possibly genetic) dispositions to honour legitimate authority. Many other rules do not have this motivational advantage, and obedience to them depends more on the expected benefits and costs of compliance versus non-compliance. Law, like religion, has enhanced moral power.⁴⁴

Accordingly, law helps to constitute key economic institutions, including money and property. As Georg Knapp put it: ‘Money is a creature of law. A theory of money must therefore deal with legal history.’ As the legal theorist James Penner wrote, property is ‘a creature of . . . the legal system.’ These claims apply especially to modern developed economies, where property and its monetary valuations are crucial for economic decision-making. In underdeveloped societies, the rule of law may be compromised by greater arbitrary or unconstitutional power. But even in these cases, law often plays an important role. An understanding of history is impossible without reference to law.

43. Mokyř (2016).

44. Features of legal institutionalism are found in Commons (1924), Samuels (1971, 1989), Field (1991), Fukuyama (2011), Hodgson (2015a), Deakin et al. (2017) and Pistor (2019). On the nature and functions of law, see Hart (1961) and Ehrenberg (2016). On obedience to authority and law, see Milgram (1974), Tyler (1990), Haidt (2012). On legitimation, see Weber (1968, 1: 212 ff.).

And economic historians are not exempt. Law is far from the only thing that matters. But it does matter.⁴⁵

Chapter 6 concludes with a discussion of whether the kind of institutional changes discussed in the preceding chapters can be understood in terms of the variation-selection-replication framework of generalized Darwinism, and if so, what peculiarities need to be added to that scaffolding. This poses an agenda for future theoretical and empirical research.

Chapter 7 considers the possibility that some English institutional innovations may have relevance for other countries today. Japan, South Korea and Taiwan are among the few economies that moved from underdevelopment in 1950 to a high level of development by the end of the twentieth century. Despite major differences with England, in their histories, cultures and institutions, these three countries fostered land collateralization, the extensive use of credit and related financial institutions, which are argued here to be generally crucial for modern economic development. Hence, despite the enormous differences between England and Japan, they both depended on modern financial institutions for economic progress. A final section draws the threads together and concludes the volume.

The evolution of the institutions of science is crucial for modern economic development, and this is briefly discussed in chapter 6. Science is an institutionalized process. Mokyr pointed to the ‘Republic of Letters’ that developed in Europe in the seventeenth and eighteenth centuries and enabled scientists from different countries to share and develop ideas. But while it was crucial, it was a limited institutional mechanism. More extensive organizations of science emerged in the nineteenth century. They were boosted in Prussia after 1809, with the university reforms of Karl Wilhelm von Humboldt. Later in the nineteenth century, universities in the United Kingdom, France, the United States, and elsewhere began to organize their scientific endeavours on a more systematic and professionalized basis. The role of science in technological and economic development became more important in a later period, after the years covered in this book.⁴⁶

This volume stresses the importance of legal property relations and financial institutions in the development of capitalism. But while these are common features of developed capitalism throughout the world, there is enormous

45. Knapp (1924, 1), Penner (1997, 3).

46. Polanyi (1962), Campbell (1969), Kitcher (1993), Hodgson (2019d), Mokyr (2016) Koyama and Rubin (2022, 171–74).

variation in the institutional structures of different capitalisms. While globalization has led to some convergence, pressures have been insufficient to force all the different capitalisms to meet on one developmental path. England is special because it was the first fully developed capitalist economy. It is also special because it is different, and it will remain so.

Some see countries as going through preordained developmental stages. Marxists, the German historical school, and numerous other scholars extensively developed such a view of history. But stages theories typically overgeneralize. At many historical junctures, diverse options are possible. Development is often path dependent, with branching possibilities at key points of bifurcation. Co-existing systems often exhibit varied tracks of development.⁴⁷

Some systems adorn and encapsulate institutions from their past. Britain today is an example. It hybridizes aristocratic elements with business and finance. Britain is a form of aristocratic capitalism. The survival of its ancient nobility is imprinted on its institutions and in the backgrounds of many of its powerful individuals. As a system it harks back to its past, to draw selective comfort from its past international hegemony and its historic achievements. England's past is played out in Britain's politics and economics today. But that is another story.

47. Stages theories of historical development are countered by the literature on path dependence (North, 1990a; Arthur, 1994; David, 1994) and on institutional complementarities (Aoki, 2001; Hall and Soskice, 2001). Some critics describe the stages view of development as 'evolutionary' and reject all 'evolutionary' approaches because of that association. (e.g., Giddens, 1979, 233; Graeber and Wengrow, 2021, 319, 442, 446–49, 454, 474). But it is a big mistake to reject all 'evolutionary' theories on such grounds. Graeber and Wengrow (2021, 446) explicitly dismissed Darwinism, with the profoundly mistaken claim that it too entails a stages theory. In fact, Darwinism rejects the notion of preordained development and all other teleological explanations of change (Veblen, 1906b; Mayr, 1988). Ironically, Graeber and Wengrow's account of a rich diversity in scale and organization among early cultures is redolent of a Darwinian view.

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