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Introduction to the Special Issue

Shigeru Akita*

This is a special issue that is based on the selected papers submitted to the 8th Anglo-Japanese Conference of British History (AJC), held at Nakanoshima Center, Osaka University, Japan, on 10th-11th August 2015.

Networks and power in society are changing today. Social networks cover the globe, transforming the power structure of society, both in its personal and organizational dimensions. On the other hand, in the area of market and economy, the newly-created 'cash nexus' is destroying existing social networks. What roles should the state and society play in regulating the disturbing effects of the market economy? We have re-examined these roles, providing wider historical and international perspectives.

The first three articles are keynote plenary lectures delivered by prominent British historians, and are concerned with the conference's major topics.

The next three articles (by Goldman, Santoki, and Ichihara) were submitted to Session 2: 'Education and industry in changing Networks and Power'. This session aimed to discuss mainly two subjects, politics and civil society, focusing especially on education and industry. In economic history, the influence of human capital on economic development has been vigorously researched. Human capital is formed through training and education, which are provided by society.

The formation of human capital, with literacy and numeracy comprising its most fundamental form, has always played a leading role in social change. On the one hand, it has been widely accepted that the level of human capital plays a pivotal role in the growth of an economy. In particular, the level of training and education provided to ordinary workers is thought to have a significant impact on the labour market and then on society. On the other hand, research has shown that the formation of human capital depends on the characteristics of the society it belongs to. Organisations and institutions in society, such as the state, schools, and many types of voluntary associations, are involved in the process. Therefore, its development has undergone various trajectories among industrialised countries.

Against these backgrounds, Britain has a unique history of education and training in its civil society. While it once enjoyed the world's highest level of scientific and technological development, achieved through its industrialisation, Britain has, in more recent years, been suffering from the drawbacks of its education system. From the age of liberalism in the nineteenth century to the recent reforms in technical education, education in Britain has struggled with its complicated networks and power structure in society. This session sought to put this debate onto a wider platform to discuss it fully as an important case study for

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networks and power in transition. For comparative purposes, we also discussed cases of other countries in many phases of development, including Japan and its industrialisation.

The next three articles (by Riello, Lee, and Styles) were papers delivered in Session 3: 'Asian trade and the Remaking of Commercial Networks & Consumer Culture in Modern Britain'. This session addressed the way in which commercial networks and consumer culture have been created and reorganised in Britain, along with the development of overseas trade, especially Asian trade, in the eighteenth and nineteenth centuries in a global context.

Since the publication of *The Great Divergence: China, Europe and the Making of Modern World Economy*, by Kenneth Pomeranz (Princeton University Press, 2000), many economic historians in the UK and the US, as well as Asian countries like Japan, China, and India, have discussed the validity of the 'Great Divergence' thesis between Western Europe (Britain) and East Asia since the late eighteenth century, which has led to a most stimulating current debate in global economic history. Pomeranz reduced the causes of the 'Great Divergence' to two elements: coal and the new (American) continent. However, as Riello revealed in his edited books, Asian trade, through the East Indian companies (the EIC and the VOC) and country traders, played a very crucial role in the transformation of the British economy, society, and consumer culture at the turn of the eighteenth and nineteenth centuries as well. The beginning of the 'Industrial Revolution' might be interpreted as the first 'import-substitution industrialisation' of Indian cotton textiles, and the formation of 'free trade nation' itself was strongly influenced by the development of overseas trade with Asia (East Indies).

We reconsider a unique feature of the British experience of 'Great Divergence', paying attention to the transformation of commercial networks, the growing demands for free trade with the competition of Indian cotton goods, and the emergence of consumer culture in modern Britain in the context of British imperial and global history.

Among the last three articles (by Nagashima, Inagaki, and Matsunami), Nagashima's was delivered to Session 1: 'Civil Society and Liberalism in Victorian Britain'. This session originally aimed to explore the historical dynamism of 'civil society' in Victorian Britain. Nagashima sought to convey a comparative perspective by referring to cases in Meiji Japan. The articles by Inagaki and Matsunami were submitted as individual papers to the Junior Scholars' Session.

The 8th Anglo-Japanese Conference (AJC) was hosted and financially supported by the Institute of Academic Initiatives (IAI), Division 9: Global History Studies, Osaka University. The local Osaka Organizing Committee collaborated with the previous national committee of the AJC, led by Professor Kazuhiko Kondo. After the Osaka Conference, the AJC merged with the East Asian Association of British History to host the next conference in 2018 with the Korean Society of British History (KSBH). The 2018 Conference will be held at Daegue, Korea, as the First Anglo-East Asian Conference of British History (AEAC) through the international collaboration of the KSBH, the previous AJC committee, and the Institute for Historical Research (IHR), University of London.

A Representation of the First Industrial Revolution as a Conjuncture for the Global Economic History of Transitions to Industrial Economies

Patrick Karl O'Brien*

Abstract. Modern economic history has taken a global turn which continues to have implications for the representation and analysis of the First and British Industrial Revolution. This lecture will not question the status of that event as a famous example of precocious industrialization. But it will make the case that generations of historians and economists have continued to exaggerate its Britishness, reified its historiographical significance and above all misrepresented an explicable conjuncture in the economic evolution of an Island realm into a paradigm case for liberal and neo liberal models and policies for the development of "follower" countries in other parts of the global economy.

Modern Representations of the First Industrial Revolution

In 1967 Marshal Hodgson (a godfather of global economic history) wrote these percipient words: "Without the cumulative history of the whole Afro-Eurasian Oikoumene of which the Occident had been an integral part the Western Transmutation would be almost unthinkable". [1] Alas, the recommendation by this eminent scholar of Islam to re-conceptualize what his essay refers to as "The Great Western Transmutation" within the wider spaces, longer chronologies and cultural frameworks of the long and interconnected history of Afro-Eurasia was not taken forward until Eric Jones published the first edition of the *European Miracle* in 1981.[2] Since then slowly but surely the bibliography of books, articles and debates relocating and reconfiguring the industrialization of the west as another long cycle in global economic history has proliferated and matured into a field that, along with accelerated trends towards a globalized economy, has revitalized interest in long run structural development across the humanities and social sciences. Thus, it is surely timely to follow Hodgson's advice and "reconfigure" Britain's famous industrial revolution as a conjuncture in that process.

This internationally renowned episode in Hanoverian history is certainly the first and the most famous example of industrialization on record. As the initial and celebrated case, generations of scholars have, however, exaggerated its Britishness (and its Englishness), reified its historiographical status and above all misrepresented what remains as a

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1 M. Hodgson, *Rethinking World History: Essays on Europe, Islam and World History* (ed. E. Burke III, Cambridge: Cambridge University Press, 1993), 68.

2 E. Jones, *The European Miracle: Environments, Economics and Geopolitics in the History of Europe and Asia* (Cambridge: Cambridge University Press, 1981).

recognizable conjuncture in the economic history of an Island realm into a (if not the) paradigm case for liberal and neo-liberal models of economic development.

Industrialization is an important historical process, drawn out or truncated over time which has occurred in local, regional, national, continental and global contexts. While its analysis includes social, cultural, political and geopolitical forces, its outcome can be parsimoniously encapsulated in statistical form as an interlude of accelerated economic transformation from an agrarian to an industrial economy.[3] Following Kuznets, in quantitative terms what economic historians have observed and measured is "structural change", proceeding more or less rapidly until majorities of national workforces cease to be closely linked with primary products and become employed either directly (or indirectly through such related activities such as trade, transportation, finance, information, consultancy, protection, welfare and other services) with the production and servicing of manufactured goods. Statistically the trend towards an industrial market economy can be tracked with reference to data displaying shares of workforces, employed in industry and related services and with far greater difficulty in imperfect tabulations of national accounts, spanning long chronologies of time displaying the shares of gross domestic products labelled as industrial outputs.

Although plausible arguments have been made for the Netherlands to be recognized as "the First Modern Economy", nobody disputes that Great Britain became the first national economy to complete the transition to an industrial economy.[4] For more than two centuries the realm's famous transformation has been narrated and explained under such labels as *The First* Industrial Revolution, *the First* Industrial Nation, or simply as *The* Industrial Revolution. Anglo-American historians have analysed the decades and cycles of rapid change in British economic history for a range of sub-periods running from the mid-17th through to the mid-19th centuries and represented them in arresting metaphorical terms as: a watershed, turning point, a take-off and latterly, as the great divergence. Claims have been published that the British Industrial Revolution was a more pervasive achievement, than the Florentine Renaissance, or the French Revolution.[5] The Industrial Revolution continues to be represented not only as a profound discontinuity for the history of the Hanoverian kingdom, but also as a conjuncture of trans-national significance for the future of the world economy, which positioned and periodized European, American, Asian and African histories into a "before" and "after" The Industrial Revolution.[6]

Although nothing approximating to a "paradigm" for industrialization (which rescued first Britons, and over time growing proportions of mankind from the millennial afflictions of poverty, malnutrition, disease and early death) endemic to existence in agrarian societies could be inducted or plausibly constructed from the economic history of a small island

3 P. K. O'Brien ed., *Industrialisation: Critical Perspectives on the World Economy*, 4 vols. (London: Routledge, 1998).

4 J. de Vries and A. van der Woude, *The First Modern Economy: Success, Failure and Perseverance of the Dutch Economy 1500-1815* (Cambridge: Cambridge University Press, 1997).

5 P. Mathias and J. A. Davis eds., *The First Industrial Revolutions* (Oxford: Blackwell, 1989), 1-24.

6 J. Goldstone, "Efflorescences and Economic Growth in World History: Rethinking the "Rise of the West" and the Industrial Revolution," *Journal of World History*, 13 (2002), 323-89.

located off the coast of Europe, there is, however, no need to derogate the precocious range of innovatory economic achievements that came on stream over the century which succeeded Britain's decisive victory in the Seven Years War 1756-63. Defined historically as *the* century which marked discernible and irreversible accelerations *in rates of increase* of real income per head, in shares of the increment both to rates of growth in output per capita and labour productivity emanating from technical and structural changes, and urbanization, it seems merely polemical to engage in semantic attempts designed to *purge* the label Industrial Revolution from academic discourse and public consciousness.[7] Considered, as Hodgson advised, in a long stream of world history, on all the indicators, that economic historians have constructed and reconstructed since the publication of Ashton's classic study in 1948, the transformation (although protracted by subsequent standards) became rapid enough to carry the national economy forward to the position of competitive superiority that the kingdom enjoyed in relation to all other European, American and Asian economies during the long Victorian boom (1846-73).[8]

Britain's naval and commercial hegemony, along with the efficiency of its agriculture, had, however, been recognized by its European rivals well before the second half of the 18th century.[9] Thereafter, and as its industries matured, the rest of the world paid deference to clear comparative advantages exemplified by several dynamic sectors of British manufacturing while retaining strong reservations about the social and political consequences of the nation's pattern of urbanization and structural change. Thus a plethora of acceptable and calibrated data (complemented by a bibliography of impressions recorded by visitors from the mainland and the United States), justifies the representation of the accelerated transformations that came on stream after the Seven Years War as stages for a First Industrial Revolution.[10] After all, that century of British history witnessed the development of novel techniques of production; the construction of engines to harness a new and potentially hegemonic source of energy (steam), the extension of improved modes of internal transportation (canals, turnpikes and railways), the diffusion of efficient forms of business and commercial organization, the spread of responsive systems of financial intermediation and distribution; the widening and closer integration of commodity and factor markets. For most historians of Britain, all this occurred at a pace and upon a scale that ex post looks extraordinary, if not revolutionary for its time and location.[11]

Nevertheless, as they become more cosmopolitan in their outlooks, historians of the First

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7 R. Cameron, "The Industrial Revolution: Fact or Fiction?," in F. Crouzet and A. Clesse eds., *Leading the World Economically* (Amsterdam: Dutch University Press, 2003), 169-194; and J. Mokyr's comments, 357-59.

8 N. Crafts and K. Harley, "Output Growth and the British Industrial Revolution: A Restatement of the Crafts-Harley view," *Economic History Review*, 45 (1992), 703-30.

9 P. Langford, "The English as Reformers: Foreign Visitors' Impressions 1750-1850," in T. C. W. Blanning and P. Wende eds., *Reforms in Great Britain and Germany 1750-1850* (Oxford: Oxford University Press, 1999), 101-19.

10 G. Riello and P. K. O'Brien, "Reconstructing the Industrial Revolution: Analyses, Perceptions and Conceptions of Britain's Precocious Transition to Europe's First Industrial Society," LSE Department of Economic History Working Paper, 84 (2004).

11 R. Floud and P. Johnson eds., *The Cambridge Economic History of Modern Britain I: Industrialization 1700-1860* (Cambridge: Cambridge University Press, 2004) and the new edition, 2014.

Industrial Revolution have become less inclined to ignore not merely its European, but its Chinese, Indian and African antecedents. Modern interpretations are now unlikely to exaggerate elements in British political institutions, social structure, and culture that not long ago formed the foundations of explanations for the nation's precocious, relative and short-lived economic supremacy. Only a few "Whig" historians and economists continue to reify core features and factors behind Britain's peculiar transition towards the first industrial market economy into a paradigm that includes advanced technologies, optimal institutions and progressive cultural traits for enterprise and innovation that could be readily transferred to those rival but retarded economies on the mainland, that became rational enough to adopt best practice (i.e. British) technologies, modes of economic organization and institutional frameworks for production.[12]

In short, a modern wave of historical scholarship has been concerned to educate students to become aware of the European, Asian and Imperial dimensions of the British Industrial Revolution; and to observe the rather rapid convergence of Western economies to comparable levels of per capita income and labour productivity in terms of the particularities of each national case and theories of path dependency. Diffusion models which, in effect, elevated the status of Britain's precocious transition to a paradigm case are no longer regarded as an illuminating way to comprehend the industrialization of mainland Europe, the United States and East Asia let alone as a basis for policy recommendations to countries still struggling to industrialize. They have been degraded into consoling but simplistic narratives purveyed by nationalistic communicators of British exceptionalism.[13]

Narrated, interpreted and contextualized as a conjuncture within a long-run chronology formed by the ebb and flow of global history, the historicized status and heuristic potential for the British Industrial Revolution comes down to a range of innovations of world significance (e.g. the steam engines of Newcomen and Watt, Corts' path breaking technique for puddling iron, the weaving machines of Kay and Cartwright), which can be represented as more or less novel and indigenous to the Islands. Other achievements of the period, such as the invention of roller spinning by the son of a Huguenot refugee; Wedgwood's "China" emulated in the Potteries, painted by young women born in Staffordshire, but in colours and designs derived from Classical Greece; or the techniques used to manufacture, bleach, dye, and print cotton cloth made in Lancashire from organic raw materials cultivated on slave plantations and finished from knowledge and skills brought to high levels of perfection, in India, the Ottoman dominions, Sweden and France are no longer acclaimed as peculiarly "English".[14] Economic history has matured into a cosmopolitan subject and it now seems

12 Among them are: D. Landes, *The Wealth and Poverty of Nations: Why Some are so Rich and Some so Poor* (New York: Little Brown, 1998) and D. North, *Institutions, Institutional Change and Economic Performance* (Cambridge: Cambridge University Press, 1990).

13 Hodgson, *Rethinking World History*, Part 1; C. Rider and M. Thompson eds., *The Industrial Revolution in Comparative Perspective* (Malabar FL: Krierger Publishing, 2000); S. Broadberry and K. O'Rourke eds., *The Cambridge Economic History of Europe I* (Cambridge: Cambridge University Press, 2010).

14 I. Inkster, *Technology and Industrialization: Historical Case Studies and International Perspectives* (Aldershot: Ashgate, 1998), 40-58, and G. Riello, *Cotton: The Fabric that Made the Modern World* (Cambridge: Cambridge

futile to separate out "indigenous" from "foreign" components embodied in the myriad of manufactured goods produced in England during the reign of George III.[15]

Fortunately, the last thirty years of research has allowed us to escape from nationalism and the tyranny of detail, to model, to amalgamate, to aggregate and to assign conjectural, but plausible, weights to *major* forces behind the accelerated growth of Britain's per capita output and labour productivity from 1763 to 1846.[16] Thus, causes or origins accorded significance that now appear in recent reconfigurations of The First Industrial Revolution include: the kingdom's highly productive and responsive agriculture; its abundant and accessible endowments of minerals, particularly coal; foreign trade, promoted and sustained by massive and cost effective state investment in naval power, the rise of material consumption and, last but not least (as exposed by models and statistics designed to "measure" the significance of several proximate determinants) technological discovery and innovation. As usual, emphases accorded to inter-related and inseparable forces behind any macro and complex conjuncture in history never settle into a consensus, but these factors (if not their ordering or their weights) are widely accepted as major causes in textbooks for the study of economic history.[17] Indeed (and as I will suggest), it may now prove persuasive to represent Britain's famous transition as a "conjuncture" in the long-run global history of material progress that came on stream when and where it did in "large measure" as the outcome favourable national endowments (including location) and massive investments by the state in naval power. Within that narrative the First Industrial Revolution will be conceived and represented here as a case of precocious and exceptional industrialization, and as an island story told largely in geographical and geopolitical terms.

Natural Endowments and National Institutions for their Exploitation

For several centuries before 1756, the British Isles had been blessed with a geography and an agricultural sector functional for structural change – exemplified by high ratios of livestock to grain output and very good (but not extraordinary) yields per arable hectare cultivated. Above all, and compared with other parts of Europe and particularly with India and China, English agriculture was distinguished by high levels of output per worker.[18] But apart from the Isle's favourable soils and climate, from where did these prior but basic advantages for a highly productive agriculture emanate? Supporters of the traditional Anglocentric view continue to insist that a rather distinctive set of property rights and

University Press, 2013).

15 M. Berg, *Luxury and Pleasure in Eighteenth-Century Britain* (Oxford: Oxford University Press, 2005).

16 N. Crafts, "Productivity Growth in the Industrial Revolution: A New Growth Accounting Perspective," *Journal of Economic History*, 64 (2004), 521-35.

17 M. J. Daunton, *Progress and Poverty: An Economic and Social History of Britain 1750-1850* (Oxford: Oxford University Press, 1995) and E. Griffin, *A Short History of the Industrial Revolution* (Basingstoke: Palgrave Macmillan, 2010) and S. Broadberry et al., *British Economic Growth 1270-1870* (Cambridge: Cambridge University Press, 2015).

18 B. van Bavel and E. Thoen eds., *Land Productivity and Agro Systems in the North Seas Area, Middle Ages-20th Century: Elements for Comparison* (Turnhout: Corn Publications, 1999) and Broadberry, *British Economic Growth*.

tenurial arrangements for access to land had appeared earlier on the Isles than on the mainland of Eurasia. Over centuries of time the evolution of a distinctively English system of property rights promoted: the formation of large scale units of production, flexible markets for access to farmland, concentration of rents from the ownership of both land and other natural resources and, above all, a steady reduction in the extent and control by peasant families over land and labour. In time, a rising share of the kingdom's cultivable acres became larger scale enclosed farms. Its kin-based agrarian workforce was gradually transformed into waged labour employed by capitalist farmers. Later on, when demands emerged for manufactured commodities, they became the nucleus and then the core of a proto industrial and urban workforce.[19] Among those following Arthur Young's inclinations to represent the kingdom's aristocracy and gentry as distinctively entrepreneurial, there has been a deferential celebration of unequal landownership as the benign outcome of market forces that promoted investment, cultures of improvement and the accumulation of capacities for efficient estate management embodied among those of noble birth who had acquired, by way of predation and inheritance (as well as purchase) a very large shares of the nation's natural resources.[20]

Markets are recommended by economists as rational institutions for the transfer of property rights to land, forests and minerals into the private ownership and/or control of those who can manage their use for purposes of production most effectively. The system of agrarian property rights (already in place well before the times of the First Industrial Revolution) embodied advantages for the realm's precocious transition to an industrial economy, which included the outstanding capacities of British agriculture to release ("expel") labour to other sectors of the economy. Nevertheless, there can be no presumption that the emergence in medieval times and the linear evolution thereafter of markets for the sale and purchase of land and of contractual rules, for rights of access to farms proceeded mainly as an efficient outcome of English individualism, or from the extension of markets.[21] Political and legal histories of the frameworks surrounding property and tenurial rights to the Island's endowments or natural resources reveal that they also emanated from far less "benign" historical forces which included conquest, internal colonization, the violent expropriation of ecclesiastical and common land, the systematic accumulation of power by closed aristocratic elites who, over time severely attenuated rights of access to the Island's cultivable land, forests and minerals by smaller freeholders and peasant families.[22] Predation from above, coupled with an intensifying "pull" from high wages potentially available to

19 M. R. Prak ed., *Early Modern Capitalism: Economic and Social Change in Europe 1400-1800* (London: Routledge, 2001).

20 R. C. Allen, *Enclosure and the Yeoman: The Agricultural Development of the South Midlands 1450-1850* (Oxford: Oxford University Press, 1992) and G. Clark, *A Farewell to Alms: A Brief Economic History of the World* (Princeton: Princeton University Press, 2007).

21 A. Macfarlane, *The Origins of English Individualism: The Family, Property and Social Transition* (Oxford: Blackwell) and R. H. Britnell, *The Commercialisation of English Society 1000-1500* (Cambridge: Cambridge University Press, 1993).

22 T. Scott ed., *The Peasantries of Europe: From the Fourteenth to the Eighteenth Centuries* (London and New York: Longman, 1998) and Allen, *Enclosure and the Yeoman.*

migrants from the countryside to London and other maritime cities, engaged with realizing gains from overseas trade and specialization, did, however, provide Britain with flexible markets for waged labour for centuries before urban industry demanded a rapidly increasing share of the nation's workforce.[23]

However, they view the long term evolution towards a rather distinctive and inegalitarian system of property rights, most economic historians are now inclined to agree that over time powerful elites pushed agriculture in directions conducive to the attainment of higher levels of labour productivity and away from the disadvantages for rapid industrialization and urbanization associated with peasant proprietorial relationships and household units for production that survived on the mainland and remained omnipresent across South and East Asian societies.[24]

Nevertheless, more geographically reductionist accounts of the island's advantages for an early transition were recognized by physiocratic improvers who visited England in the eighteenth century. Although they lauded its distinctive set of tenurial institutions, coupled with concentrated land ownership and aristocratic management of large estates, most insisted on the primacy of natural endowments. Their perceptions that the Island's favourable environmental endowments (particularly lush grass) had encouraged the steady accumulation of sheep, cattle, pigs and, above all, horses, is now commonplace in agrarian history.[25] By the Civil War the kingdom's exceptionally large population of animals provided the high value outputs, extra supplies of energy and flows of organic fertiliser that had carried English agriculture to the head of European league tables, and up onto a plateau from where the primary sector could (with increasing help from colonized Irish land and labour) lend support to accelerated population growth, proto-industrialization and extensive urbanization. Geography not only matters more than institutions, it goes a long way towards explanations for the latter's form and evolution.[26]

Wrigley has brought back into the foreground of the First Industrial Revolution, another and equally significant natural advantage that Britain derived from easy access by waterborne transportation to abundant supplies of cheap inorganic energy in the form of coal. True, its European competitors, particularly Belgium, Germany (even France and China) also possessed subterranean forests, but not of the same quality, nor nearly as cheap to transport to coastal cities. Britain began and completed the transition from organic to inorganic (mineral) sources of energy several decades before the rest of Europe.[27] By the

23 R. C. Allen, "The Great Divergence in European Wages from the Middle Ages to the First World War," *Explorations in Economic History*, 38 (2001), 411-47.

24 K. Pomeranz, "Beyond the East-West Binary: Resituating Development Paths in the Eighteenth Century World," *Journal of Asian Studies*, 61 (2002), 539-90.

25 P. K. O'Brien and D. Heath, "English and French Landowners 1688-1789," in F. M. L. Thompson ed., *Landowners, Capitalists and Entrepreneurs: Essays for Sir John Habakkuk* (Oxford: Oxford University Press, 1994) 23-62, and Broadberry, *British Economic Growth*.

26 P. K. O'Brien, "Path Dependency, or Why Britain Became an Urbanized and Industrialized Economy Long before France," *Economic History Review*, 49 (1996), 213-49.

27 A. Wrigley, *Continuity, Chance and Change: The Character of the Industrial Revolution in England* (Cambridge: Cambridge University Press, 1988).

early nineteenth century, households and firms consumed around 15 million tons of coal a year, compared to 3 million tons for Europe as a whole. Estimates for tons of coal mined in China are not available, but for reasons that are not clear, the large-scale deposits in the Northern provinces of the Qing Empire remained underground until well into the twentieth century.[28] Mainland European and East Asian economies and cities utilized traditional substitutes such as peat, wood, water, wind and human energy, but the advantages for earlier industrialization of using the cheaper and more efficient thermal form of energy turned out to be substantial. For example, wind and waterpower are less reliable and predictable. Coal replaced the land, used to feed horses and oxen as well as the manpower employed in forestry. As a substitute for wood fuel, coal allowed more land and other resources to be devoted to growing food and agrarian raw materials. Given that the energy from a ton of coal equals the energy from two tons of timber, and an acre of land produces two tons of dry wood, Britain's coal output for 1815 implies that 15 million acres (equivalent to 88% of its arable area) had counterfactually by then been released from forestry to grow grains, vegetables, industrial raw materials and sustained livestock.[29]

Heat-intensive industrial processes in metallurgy, glass making, brewing, refining sugar and salt, chemistry, in baking food and bricks etc., could all be conducted more efficiently with cheap coal. The feedbacks and technological spin-offs from these industries to metallurgy and to the making of kiln's, pots, vats and containers also turned out to be important for industrial development. Cheaper fuel which kept workers warmer at home and work diminished their needs to calories in order to generate greater human efforts required for production. While lower cost bricks and metals for the construction of houses in cities, towns and industrial villages, saved capital which could be invested in social overhead facilities and an industry.

For organic systems of production, energy accounts constitute a heuristic and illuminating complement to national income data for the analysis of transitions to modern systems of production requiring diversified sources of energy. At a time when technological progress, which augmented labour productivity remained slow and confined to a few sectors of industry, countries favourably endowed with fertile land, minerals, natural waterways and, above all, with a cheaper fuel linked to a maturing, but leading, network technology (steam power) enjoyed a head start in the "leap forward" to become industrial market economies.[30]

28 I. Inkster and P. K. O'Brien eds., "The Global History of the Steam Engine," *History of Technology*, 25 (2004), special issue on the steam engine.

29 R. P. Sieferle, *The Subterranean Forest: Energy Systems and the Industrial Revolution* (Cambridge: The White Horse Press, 2001) and E.A. Wrigley, *Energy and the English Industrial Revolution* (Cambridge: Cambridge University Press, 2010).

30 V. Smil, *Energy in World History* (Boulder, Colo: Westview Press, 1994) and P. Malamina, *Pre-Modern European Economy: One Thousand Years (10th-19th Centuries)* (Leiden: Brill, 2009).

The Nature and Economic Significance of Britain's Maritime Strategy for Security with Commerce and Development

Debate about the precise nature and significance of foreign trade for the British Industrial Revolution continues. Views on that connexion range all the way from "trivial and dispensable" to "necessary and sufficient".[31] Contemporary perceptions and histories which maintained that commerce overseas could, through all kinds of mechanisms (not captured within a modern statistical framework, based upon national accounts), have been a significant component of British industrialization, have now been restored as entirely valid. For comparative economic history, they probably represent the most significant of Marc Bloch's salient contrasts between Britain and its economic rivals.[32]

Over the eighteenth century, the volume of British-made commodities sold overseas multiplied four times, compared to a multiplier of over just two, between 1500 and 1700, ratios of exports to gross national product increased from little over 4% in the reign of Elizabeth, to 6% after the Restoration, up to 8% at the Glorious Revolution and the quotient reached 12% in the reign of George III. At least half of the increment to industrial production, which came on stream over a long eighteenth century (1688-1815), was sold overseas. Shares of the outputs exported of the then most rapidly growing and technically progressive of British industries (cottons, woollens, metals, shipbuilding) became outstanding. For the development of a British economy, led by modernizing industries, the nation's multi-faceted involvement with the world economy has now emerged as an unmistakeably significant precondition for the growth with structural change and diversification, that took place before and during the Industrial Revolution. Already by the close of the Seven Years War, something like half of the nation's workforce (de-linked from agriculture) depended directly and indirectly on markets overseas for its livelihood. Revenues from exports exchanged for strategic materials (pitch, tar, hemp, timber, bar iron, vital for: the naval defence of a mercantilist realm); for taxable tropical foodstuffs such as sugar, tea, coffee and spices, consumed by industrious families, and, above all, for fibres for the rapidly growing cotton and the linen and silk industries.[33]

Over the period 1790 to 1820, net imports of farm produce (foodstuffs and organic raw materials) rose from abound 20% to 40% of domestic farm output. As *pôles de croissance* (London, Bristol, Hull, Glasgow, Newcastle, Liverpool and other maritime cities) provided the infrastructures, skilled workforces and internal transportation and distribution networks

31 J. Mokyr ed., *The British Industrial Revolution: An Economic Perspective* (Boulder, Colo: Westview Press, 1993).

32 J. Cuenca-Esterban, "The Rising Share of British Industrial Exports in Industrial Output 1700-1851," *Journal of Economic History*, 57 (1997), 879-906; G. Clark et al., "The Growing Dependence of Britain on Trade during the Industrial Revolution," *Scandinavian Economic History Review*, 62 (2014), 109-36; R. C. Allen, *The British Industrial Revolution in Global Perspective* (Cambridge: Cambridge University Press, 2009), Ch. 4; K. Harley, "Trade: Discovery, Mercantilism and Technology," in Floud and Johnson, *Cambridge Economic History of Modern Britain I*, 175-203.

33 P. K. O'Brien and S. Engerman, "Exports and the Growth of the British Economy from the Glorious Revolution to the Peace of Amiens," in B. Solow ed., *Slavery and the Rise of the Atlantic System* (Cambridge: Cambridge University Press, 1991), 117-210 and Cuenca-Esterban, "The Rising Share of British Industrial Exports."

to service internal as well as overseas trade. Their high wages attracted labour from the countryside. Cities and their hinterlands integrated into productive fiscal bases for the states rapacious demand for customs and excise duties, which were allocated to build up the naval power, deployed to defend British markets, colonial territories and assets overseas. Alas, we do not have estimates for the total values of commodities and services, exchanged across the world's frontiers between 1660 and 1846, but Britain (not France, Portugal, Spain, the Netherlands, let alone China or Japan) probably obtained a lion's share of the gains from international trade and commerce over that period of proto-globalization.[34]

Some part of the growth in commerce that generated feedbacks and spin-offs for Britain's transition to an industrial economy occurred because the world economy as a while was led forward at a faster rate by the continued expansion of the Atlantic economy, coupled to the forging of closer commercial connexions between Europe and the Americas across the Indian and Pacific oceans with India, South East Asia, Japan and China. Indeed the British economy did exceptionally well during a long upswing in global trade that succeeded the consolidation of the Manchu dynasty (1644-83) and with the break-up of the Mughal Empire in India (1761-1818).[35]

Did that occur (as new and old Whigish historians maintain) because the country's institutions (particularly its Parliamentary system of Government framework of law and embedded cultures of enterprise, bourgeois virtues and enlightenment) became more hospitable to private investment and innovation than institutions conditioning the development of rival economies on the mainland, as well as the maritime provinces in Qing China and Tokugawa Japan?[36] Research into histories of continental economies and surveys of perceptions by contemporary European travellers to the Isles, has left historians more agnostic about the superiorities of the Hanoverian realm's institutions.[37] While rediscovered economic worlds of "surprising resemblances" across a range of advanced regions of Eurasia, also undergoing Smithian growth for centuries before the First Industrial Revolution, has qualified both Neo-Marxian and vulgar Weberian perceptions that only certain countries and regions of North Western Europe (particularly England, but also Holland) had proceeded along Smithian trajectories or Schumpeterian paths for development, leading stage by stage to modern economic growth.[38] Both societies had, however, appropriated and defended

34 J. Cuenca-Esterban, "Comparative Patterns of Colonial Trade: Britain and its Rivals," in L. Prados De La Escosura ed., *Exceptionalism and Industrialisation: Britain and its European Rivals 1688-1815* (Cambridge: Cambridge University Press, 2004) 35-69.

35 A. Gunder Frank, *ReOrient: Global Economy in the Asian Age* (Berkeley: University of California Press, 1998), 63-171.

36 C. P. Kindleberger, *World Economic Primacy 1500-1990* (Oxford: Oxford University Press, 1996); J. Mokyr, *The Enlightened Economy: An Economic History of Britain 1700-1850* (New Haven and London: Yale University Press, 2009); D. McCloskey, *The Bourgeois Virtues: Ethics for an Age of Commerce* (Chicago: Chicago University Press, 2006).

37 R. Sylla and G. Toniolo, *Patterns of European Industrialization: The Nineteenth Century* (London: Routledge, 1991) and Riello and O'Brien, "Reconstructing the Industrial Revolution."

38 K. Pomeranz, *The Great Divergence: China, Europe and the Making of the Modern World Economy* (Princeton: Princeton University Press, 2000). For a survey and critique of the Pomeranz thesis, read P. Vries, *State, Economy and the Great Divergence: Great Britain and China 1680s-1850s* (London: Bloomsbury Academic Press, 2015).

increasing shares of the gains to be reaped from mercantilistic engagements in global trade and commerce.[39]

Nevertheless, one potentially significant contrast between Britain and other pre-modern rivals (including Holland) for a First Industrial Revolution has become clearer – namely, the nation's geographically conditioned but politically sustained fiscal commitment to a naval strategy for the defence of the realm – which carried unintended, but benign consequences for the development of a public-cum-private maritime sector of the British economy, which led the economy forward into a first Industrial Revolution.

Not long after the Hundred Years War (1337-1453) when England's feudal armies had ignominiously retreated from centuries of dynastic warfare on the mainland, the Island's kings, aristocrats and merchants began to conceive of naval power, funded and managed by the Crown, as the first line of defence against external threats to the security of their high stakes in the wealth of the realm and as the force necessary to back conquest and commerce with continents outside Europe.[40]

That conception took a long time to evolve into a constitutional consensus. Maturity came after nearly two centuries of fiscal stasis, malign disputes over religion, persistent acrimony between Parliament and the Crown's over rights to levy taxes and, above all, from a reordering of the realm's ideology during an interregnum of destructive civil war and republican rule. Following on from the Restoration of monarchy and aristocracy, Britain's elite sustained the political consensus required to form a highly effective fiscal naval state.[41] With vicissitudes (including regime change, following from the Dutch coup d'état of 1688, and the loss of political sovereignty over 13 American colonies in 1783), that state became outstandingly successful in raising the funds (taxes linked to loans) required for external security, for the stability of an essentially *ancien regime*, for the maintenance and protection of an established religion and an inegalitarian system of property rights.[42] The rights to own, protect and use: natural resources and capital located within the kingdom; its merchant shipping and merchandize on the high seas; and the bases, plantations, mines and slaves in colonies of an expanding empire became more effectively sustained for Britons than for any other propertied elite in Western Europe, the Americas, Africa and Asia.

Quite exceptional levels of protection, stability and good order supplied by a monarchical and aristocratic regime for its wealthier citizens rested upon a rapidly expanding fiscal and financial base.[43] Between 1670 and 1815 total revenues from taxes rose by a factor of around 17, while national income increased by a multiplier of 3. The bulk of the formally

39 P. K. O'Brien, "Mercantilism and Imperialism in the Rise and Decline of the Dutch and British Economies," *De Economist*, 148 (2000), 469-501.

40 N. A. M. Rodger, *The Safeguard of the Sea: A Naval History of Britain I, 600-1649* (London: Allen Lane, 1997).

41 H. Roseveare, *Financial Revolution 1660-1750* (London and New York: Longman, 1991).

42 J. Brewer, *The Sinews of Power: War, Money and the English State 1688-1783* (London: Unwin-Hyman, 1991); A. Page, *Britain and the Seventy Years War 1744-1815: Enlightenment, Revolution and Empire* (Basingstoke: Palgrave Macmillan, 2015); R. Torres-Sanchez ed., *War, State and Development: Fiscal Military States in the Eighteenth Century* (Pamplona: Ediciones Universidad de Navarra, 2007).

43 Prados De La Esocoura, *Exceptionalism and Industrialization* and Vries, *State, Economy and the Great Divergence*.

sanctioned appropriations by Parliaments of notables were allocated by central government to service a national debt, incurred to fund no less than eleven wars against other European powers and economic rivals – mainly conflicts with France and Spain, but including four naval wars against the Netherlands.

From a nominal capital of less than £2 million in the reign of James II, Britain's national debt grew to reach to the astronomical sum of £854 million, or 2.7 times the national income for 1819 and the shares of taxes devoted to servicing, what appeared to a majority of taxpayers as an incubus of royal-cum-public debt, jumped from modal ratios of 2-3% before the Glorious Revolution to 60% after the Napoleonic War.[44]

Castlereagh and other European statesmen who signed the Treaty of Vienna, were acutely aware of the costs of geopolitical strife. Yet the, by then, United Kingdom of England, Wales, Scotland and Ireland, enjoyed virtually complete security from external aggression, possessed the largest occidental empire since Rome, and had acquired in the course of two centuries of prolonged mercantilist warfare, extraordinary shares of world trade and income from servicing global commerce. By 1815 its domestic economy stood half-way through the First Industrial Revolution.[45]

To thrive in a mercantilist economic order, riven with dynastic, imperial and economic rivalries, the Island state had allocated considerable resources to: preclude invasion, preserve internal stability and retain advantages over its equally violent European competitors in armed struggles for gains from global commerce and colonization. Even cliometricians now recognize that geopolitical conditions formed inescapable parameters within which state formation, institution, building and macro-economic growth occurred.[46] For the age of mercantilism post hoc analyses by economists of yesteryear based upon counterfactual scenarios concerned with distortions from competitive equilibrium wrought by taxation, and more recently with theoretically ambiguous and unmeasurable crowding out effects that flowed from high levels of government borrowing look like interesting, but anachronistic exercises in applied econometrics.[47] They are surely irrelevant as responses to questions of whether the state had raised and allocated the resources that carried the kingdom and its economy to a plateau of safety, political stability and potential for future development attained and envied by the rest of Europe, at the Congress of Vienna. Since nobody then (or historians later) elaborated alternative strategies which combined security for the realm and internal order with growth for the economy, the comparison of an entirely explicable maritime strategy for security and development, pursued by the British state with strategies

44 P. K. O'Brien, "The Political Economy of British Taxation 1660-1815," *Economic History Review*, 41 (1988), 1-32.

45 P. K. O'Brien, "Fiscal Exceptionalism: Great Britain and its European Rivals from Civil War to Triumph at Trafalgar and Waterloo," in D. Winch and P. K. O'Brien eds., *The Political Economy of British Historical Experience 1688-1914* (Oxford: Oxford University Press, 2002), 246-65.

46 N. Voigtländer and H-J. Voth, "The Three Horsemen of Riches: Plague, War and Urbanization in Early Modern Europe," *Review of Economic Studies*, 80 (2013), 774-811.

47 J. Glete, *War and the State in Early Modern Europe: Spain, the Dutch Republic and Sweden as Fiscal-Military States, 1500-1660* (London: Routledge, 2002) and A. Monson and W. Scheidel eds., *Fiscal Regimes and the Political Economy of Premodern States* (Cambridge: Cambridge University Press, 2015).

pursued by rival European and Asian powers, could only lead to a Panglossian conclusion that *virtually everything that was done looks unavoidable, was undertaken for the best in the worst of all possible worlds and paid off*.[48]

Inaugurated under the republic, the costs incurred to support Britain's strategy for geopolitical security with economic power can be read from tabulations of the state's relative and persistently high levels of expenditure on the Royal Navy.[49] That sustained commitment provided the kingdom with the world's largest fleet of battleships, cruisers and frigates, manned by a virtually coerced workforce of underpaid able seamen, under the command of a highly motivated and well rewarded corps of professional officers.[50] The fleet was constructed and maintained in readiness for multiple missions at sea by an onshore workforce of skilled shipwrights, carpenters and other artisans and supported by an infra-structure of ports, harbours, dockyards, stores for victuals and spare parts, ordnance depots and other facilities under collaborative and coordinated public and private ownership and control.[51]

Once the Island's huge fleet and massive onshore infra-structure of human and physical capital were operating, primarily to keep ships of line strategically placed at sea as the first bastion of defence for the realm, at falling average costs the state could deploy cruisers, frigates and other well- armed ships on mercantilist missions for the protection of British trade and its colonies; for predation on competitive and potentially hostile merchant marines; for the bombardment (actual or threatened) of enemy coastal cities and colonies.[52] Britain's evolving maritime strategy that rationally combined defence with trade and growth turned out to embody all kinds of attendant and unintended spin-offs for internal order, for the protection of property rights and for the extension of domestic as well as colonial and foreign markets.

For example, the nation's fleet of durable, strategically placed and proficient ships of the line (floating fortresses) provided external security at a relative high level of efficiency compared to the logistical costs per joule of force delivered by larger European armies, recruited, mobilized, equipped, supplied with food and forage, and moved overland to battle grounds, places of siege and vulnerable borders to repel enemy attacks.[53]

Its economically efficient offshore strategy for defence also allowed the British state to

48 P. K. O'Brien, "The Formation of States and Transitions to Modern Economies: England, Europe and Asia Compared," in L. Neal and J. G. Williamson eds., *The Cambridge History of Capitalism I* (Cambridge: Cambridge University Press, 2014), 357-403.

49 *Parliamentary Paper 1868-69* (XXXV); C. Chandaman, *English Public Revenue 1660-1688* (Oxford: Clarendon Press, 1975); F. Dietz, *English Public Finance 1458-1641*, 2 vols. (New York: Frank Cass, 1964).

50 N. A. M. Rodger, *The Command of the Ocean: A Naval History of Britain II, 1649-1815* (London: Allen Lane, 2004).

51 R. Morris, *Naval Power and British Culture 1760-1850: Public Trust and Government Ideology* (Aldershot: Ashgate, 2004) and idem, *The Foundations of British Maritime Ascendancy: Resources, Logistics and the State, 1755-1815* (Cambridge: Cambridge University Press, 2011).

52 D. Baugh, "The Eighteenth Century Navy as a National Institution," in J. R. Hill ed., *The Oxford Illustrated History of the Royal Navy* (Oxford: Oxford University Press, 1995), 120-60 and Page, *Britain and the Seventy Years War.*

53 R. Harding, *The Evolution of the Sailing Navy 1509-1815* (Basingstoke: Macmillan, 1995) and J. Landers, *The Field and the Forge: Population, Production and Power in the Pre-Industrial West* (Oxford: Oxford University Press, 2003).

allocate greater proportions of its revenues (derived from an elastic fiscal and financial system) to support mercantilist and imperial missions pursued at sea, and at the same time to sustain surprisingly high levels of military expenditure.[54] Paradoxically and throughout the period 1688-1815, expenditures on armies by the Eurasian state most committed to naval power, amounted to a modal 60% of the total allocated to the realm's armed forces.[55]

Part of that allocation included the costs of hiring mercenary regiments of Hanoverian, Swiss, Hessian and other soldiers for combat outside the kingdom; part consisted of subsidies and subventions to European allies willing to field troops to contain and thwart the designs of France and its allies on the mainland, in India and the Americas. The most politically contentious part consisted of the commitment of English and Celtic troops to theatres of war on the continent, notably in 1702-12 and 1808-15. Strategic expenditures on the military forces of Britain's clients and allies restrained the ambitions of Bourbon states (France and Spain) and other antagonists from allocating funds to construct fleets with the capability required to mount serious challenges to the Royal Navy's defence of the realm and its effective protection of the nation's interest and overseas.[56]

Thus, a considerable proportion of revenues, surplus to requirements for the Royal Navy was allocated to British regiments, militias, volunteers and yeomanry on stations in the realm. They served as a less than credible second line of defence against foreign invasions, but were utilized consistently during a potentially unstable period of population growth, industrialization and urbanization, to preserve an aristocratic regime against subversion on its Celtic fringes and to protect English hierarchy and property rights against challenges to law and order.[57]

From time to time prospects for internal trade within a less than United Kingdom came under threat from within those potentially seditious provinces of Scotland and Ireland; particularly the latter where a colonized Catholic population resented "English" property rights and the metropole's discriminatory regulation of Irish commerce and industry.[58] With external security taken for granted, other public goods such as stability, good order, the maintenance of property rights and support for hierarchy and authority over potentially unruly employees became the key political-cum-economic interest for landowners, merchants, farmers, industrialists and other businessmen of Hanoverian Britain. On the whole this monarchical and aristocratic state met their concerns. When lobbied, it redefined legal rights for new forms of wealth by promulgating statutes for a national economy which superseded custom and common laws that might counterfactually have been used to provide

54 P. K. O'Brien and P. Hunt, "England 1485-1815," in R. Bonney ed., *The Rise of the Fiscal State in Europe, c. 1200-1815* (Oxford: Oxford University Press, 1999), 53-100.

55 *Parliamentary Paper 1868-69* (XXXV).

56 D. A. Baugh, "Great Britain's Blue Water Policy 1689-1815," *International History Review*, 10 (1988), 33-58.

57 J. Cookson, "Service Without Politics? Army, Militia and Volunteers in Britain during the American and French Revolutionary Wars," *War in History*, 10 (2003), 381-97 and P. K. O'Brien, "The State and the Economy 1688-1815," in R. Floud and D. McCloskey eds., *The Economic History of Britain since 1700 I* (Cambridge: Cambridge University Press, 1994), 205-41.

58 L. Cullen, *An Economic History of Ireland since 1660* (London: Batsford, 1987).

greater protection for the welfare of the majority of the nation's workforce without assets, status and power, but threatened by market forces associated with industrialization and the modernization of agriculture.[59]

For example, the institutions of the Elizabethan poor law for dealing with poverty, unemployment, vagrancy and labour migration maintained a repressive system of control over the labour of juveniles, females and unskilled men. For less vulnerable artisans and industrial workers and especially for those courageous groups who formed "combinations" to challenge what they perceived to be adverse changes to a traditional and more moral economy, the punishments prescribed by Parliament for: the formation of unions; for riots against high prices of basic necessities; for resistance to enclosures and turnpikes; to attacks upon mills, barns, factories and labour saving machinery; for insubordinate and disorderly conduct as well as every kind of theft, became discernibly harsher and, under an ever-extending bloody legal code, increasingly subject to capital punishment.[60]

Parliament's antipathies to large standing armies in times of peace looks like Whig rhetoric because the actual numbers of troops, embodied militiamen and patriotic volunteers on station in Britain and Ireland year after year (and particularly in wartime), were more than adequate to repress disturbances to the peace. For purposes of political stability, the maintenance of internal order, the protection of property and upholding hierarchies of all kinds, it is not at all obvious that on a per capita basis, the political and legal authorities of constitutional Britain commanded a smaller or less coercive force of troops than so-called "despotisms" on the mainland of Europe, who deployed armies (not capital intensive navies) to defend their more vulnerable frontiers. Famously, in 1808 the numbers of soldiers mobilized to combat Luddites in the Midlands and North of England, exceeded troops under Wellington's command in the Peninsular.

With virtually no police at their command, the Navy allowed the political authorities (central, county and local) of Hanoverian Britain to allocate less of their revenues to external security and to provide an effective military presence and exemplary displays of the armed force required to maintain good order, protect property and preserve authority among a potentially ungovernable society, becoming more urban and "dangerous" by the year, but which was eventually subjugated and cajoled into the culture of deference that characterized Victorian society. [61]

59 Vries, *State, Economy and the Great Divergence*.

60 J. Rule, *Albion's People: English Society 1714-1815* (London and New York: Longman, 1992) and J. Humphries, *Childhood and Child Labour in the British Industrial Revolution* (Cambridge: Cambridge University Press, 2010).

61 J. Brewer and J. Styles eds., *An Ungovernable People: The English and their Law in the Seventeenth and Eighteenth Centuries* (London: Hutchinson, 1980); C. Emsley, *Crime and Society in England 1750-1900* (London and New York: Longman, 1987); Cookson, "Service without Politics"; B. Hilton, *A Mad, Bad and Dangerous People? England 1783-1846* (Oxford: Clarendon Press, 2006).

The Discovery, Take-up and Diffusion of "English" Technology

For several reasons, the invention and diffusion of a familiar list of machines, energy converters and industrial processes, long represented as "English" and regarded as prime movers behind the national economy's precocious transition, seems to have been relegated from a traditionally clear position of prominence to contexts where their importance has been historicized. That has occurred not only by way of significance testing by cliometricians, but because the Industrial Revolution is no longer Anglocentrically or Eurocentrically conceived as a short sharp discontinuity based upon fundamental breakthroughs in industrial technologies, emanating from and developing within a singularly progressive set of Anglo-Saxon institutions and cultures.[62]

Several inventions certainly emerged and matured in Britain after the Seven Years War, but their impact was confined to particular sectors of industry (cotton textiles, metallurgy, shipbuilding, transportation and the generation of energy from steam). Technologies and organizations that became first the wonders and eventually the marks of a modern economy (machines, steam power, processes for making and shaping metals, chemicals, factories, etc.) appeared early but matured rather slowly over that century of "revolutionary transition" after 1756.[63] Calibrations purporting to account in quantitative terms for the sources of British economic growth which are derived from exercises that "fit" production functions to extant, but imperfect data for national output and for inputs of land, labour and capital expose the persistence of an entirely traditional and extensive form of aggregated growth for GDP per capita, which emanated mainly from somewhat higher rates of capital accumulation and upswings in the size and hours worked by the workforce rather than innovations of even new sources of energy *per se*.[64]

These essentially taxonomic exercises do provide some kind of historical and nationwide perspectives, derivable from cliometric models designed to quantify the significance of *proximate* sources behind the growth of Britain's domestic product.[65] Nevertheless, they also obscure the contribution of technological change and organizational improvements for conjunctures in rates and trajectories for long-run structural change. Historically, technological discovery and diffusion had proceeded slowly in many regions of a connected, but not integrated Eurasian Oikumene. Discontinuities in the potential for the development of national economies are more heuristically located and measured by two hallmarks of modern economic growth, namely, accelerated and sustained rates of growth in output per

62 For this debate see M. Berg and P. Hudson, "Rehabilitating the Industrial Revolution," *Economic History Review*, 45 (1992), 24-50; P. Temin, "Two Views of the British Industrial Revolution," *Journal of Economic History*, 57 (1997), 63-82; N. Crafts and K. Harley, "Output Growth and the British Industrial Revolution"; K. Harley and N. Crafts, "Simulating the Two Views of the Industrial Revolution," *Journal of Economic History*, 60 (2000), 819-41.

63 C. MacLeod, *Heroes of Invention: Technology, Liberalism and British Identity 1750-1914* (Cambridge: Cambridge University Press, 2007)

64 N. Crafts, "Productivity Growth in the Industrial Revolution" and Broadberry, *British Economic Growth*.

65 J. Mokyr, "Accounting for the Industrial Revolution," in Floud and Johnson, *Cambridge Economic History of Modern Britain I*, 1-27.

worker and incomes per capita.[66] For the British case and after protracted debate over relevant models and acceptable statistics, cliometricians now take into account both the quality of the data at their disposal and the reciprocal interactions between profitable opportunities provided by the appearance of new process and product innovations on the one hand, and higher rates of investment on the other. They have narrowed their focus and concentrate their analysis upon the sources of the incremental addition to a traditional and very low rate of growth. In this perspective and context statistical exercises reveal that technical progress evolved over time to reach a vantage point around the mid-nineteenth century when its outcome for the growth of the economy can be retrospectively perceived and measured as highly significant and to have been highly significant. Historians have uncovered and recalibrated data that suggests that changes in labour productivity and standards of living without the discovery, development and diffusion of technologies and improved modes of organization that augmented the average levels of productivity of the national workforce, the British economy could never have been acclaimed as the locus for a First Industrial Revolution.[67]

Nevertheless, the new technology that came on stream in Britain at that time can be most heuristically represented by a chapter included in a longer and more complex historical narrative. That chapter would recognize its confined scope for transformation and potential across all sectors, not only for the national economy, but for its leading sector of manufacturing itself. Economic histories of a range of industries (other than those paradigm cases of revolutionary change, cotton textiles and iron) have made us more aware of the decades taken and costs incurred to develop and adapt blueprints for invention through several stages of development and protracted periods of learning by using, until original and promising designs mature into marketable, prototype machines, processes and artefacts.[68] It is now appreciated that the forward planning and investment required to embody a backlog of known product and process innovations by British firms that had been long connected to markets for commodities, labour and capital took decades to mature. Furthermore, such firms had to be networked to suppliers of raw materials and to transportation and distribution services so that entrepreneurs exploiting new knowledge could realize external economies of scale and agglomeration by locating in Britain's industrial towns and maritime cities. The costs of system-wide investments required to develop, embody and relocate production in factories and towns turned out to be large multipliers of the original outlays borne by inventors and their networks supporting research and development into "potentially" useful and commercially viable knowledge in the first place.[69]

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66 B. A'Hearn, "The Industrial Revolution in a European Mirror," in R. Floud et al. eds., *The Cambridge Economic History of Modern Britain I: 1700-1870* (Cambridge: Cambridge University Press, 2014), 1-53.

67 Allen, *The British Industrial Revolution*; Broadberry, *British Economic Growth*; N. Crafts, "The First Industrial Revolution: Resolving the Slow Growth/Rapid Industrialization Paradox?," *Journal of the European Economic Association*, 3 (2005), 525-34.

68 R. Church and A. Wrigley eds., *The Industrial Revolutions,* 11 vols. (Oxford: Blackwells, 1994), 8-10 vols.

69 V. Ruttan, *Technology, Growth and Development: An Induced Innovation Perspective* (Oxford: Oxford University Press, 2001), part 2.

As pioneer movers into unexplored realms and spaces for the exploitation of novel industrial products and technologies, British investors and entrepreneurs lacked examples of anything like a prior range experiments and experience from elsewhere, as well as access to an extensive and reliable base of systemic scientific theories of how, where and why things work that later in the nineteenth century could be utilized to expose the problems, ramifications and potential for untried knowledge more rapidly and at lower cost. Latecomers and subsequent industrializers entered into their transitions with advantages unavailable to Britain. [70]

Nevertheless, and although British investors lacked references to practice elsewhere and to a sufficiently widespread diffusion of science to inspire greater confidence to undertake risky investments in new technologies, their direct support for research and development and for a more rapid and extensive diffusion of potentially useful knowledge already available, post 1763, does not appear, with hindsight, to have been particularly "entrepreneurial". Considered as a national group, British capitalists promoted and managed one of the slowest, and for the working classes, more miserable transitions to an industrial economy in world history.[71]

Subsequent faster and often more socially benign industrial revolutions are marked by higher rates of saving and investment and a more rapid take up of advanced technology than British investors and businessmen seem to have been willing to contemplate and undertake for the First Industrial Revolution.[72] For example, in the British case the ratio of gross investment to national income took more than a century to double from a rather low base point of around 6% in 1760.[73] In relation to countries that followed Britain in to industrial revolutions this looks, again in retrospect, like unimpressive average and marginal propensities to save and invest in the social overhead and industrial capital required to promote faster urbanization.[74]

The slow rise in domestic capital accumulation required to exploit new technology cannot, moreover, be attributed to the massive sums of otherwise surplus investible funds borrowed by the state to fund three wars (1756-63, 1776-83 and 1792-1815) against France and other European rivals and the United States. Counterfactually Government borrowing for purposes of waging war (in all eleven conflicts from 1652-1802) might, in theory, have "crowded out" some potential for higher rates of private capital formation, but the overall

70 J. Mokyr, *Gifts of Athena: Historical Origins of the Knowledge Economy* (Princeton: Princeton University Press, 2002) and M. Jacobs, *The First Knowledge Economy: Human Capital and the European Economy 1750-1850* (Cambridge: Cambridge University Press, 2014).

71 R. C. Allen, "Engels Pause: Technical Change, Capital Accumulation and Inequality in the Industrial Revolution in Explorations," *Explorations of Economic History*, 46 (2009), 418-35; Riello and O'Brien, "Reconstructing the Industrial Revolution"; Jacob, *The First Knowledge Economy*.

72 J. Ventura and H-J. Voth, "Debt into Growth: How Sovereign Debt Accelerated the First Industrial Revolution," National Bureau of Economic Research Working Paper, 21280 (2015), 1-29.

73 C. Feinstein and S. Pollard eds., *Studies in Capital Formation in the United Kingdom 1750-1920* (Oxford: Clarendon Press, 1988).

74 Allen, "Engels Pause."

effect could well have been, in the way that it operated, positive for structural change.[75] The observed variations between years of war and interludes of peace in real rates of interest received by investors on low risk government securities floated and sold on the London capital market, does not suggest that Britain was an economy constrained by capacities to save. On the contrary, the overall supply of investible funds that appeared during all three major wars, 1756-1793, appears rather elastic with respect to additional demands from a state that offered both domestic and international capital markets attractive and secure paper assets. Government borrowing to wage war also promoted the development of financial intermediation in London and moves towards integration of a national capital market across the kingdom (linked to European money markets) which raised both the elasticity of the money supply and improved the allocation of investible funds.[76]

To return to the analysis of strategic expenditures elaborated above, models of crowding out that neglect the benefits (and incentives for investment) provided by high rates of expenditure by the state upon external security, the protection of commerce and colonization overseas and a repressive but effective system of internal order, are seriously under-specified. Balance sheets (costs and benefits) flowing from expenditures upon these indispensable public goods would certainly be difficult to model and impossible to add up. Given that rather high levels of expenditure on the army and navy were necessary for state formation and the preservation of British institutions (particularly when periodic threats of invasion by sea appeared in wartime) the crowding out hypothesis needs to be reformulated as the problem of estimating the proportions of taxes and loans devoted to security and stability that could conceivably be defined as "unnecessary and wasteful" appropriations and allocations by the Hanoverian state. Few mercantilists of the period suggested that the depressing effects on private savings and investment flowing from the operations of the fiscal and financial system exceeded the benign effects of "crowding in" which they argued, depended upon the effective provision of external security, successful mercantilism, stability and internal order.[77] Adam Smith certainly appreciated that defence came before opulence and that unilateral withdrawal from the prevailing geopolitical order surrounding an Island state was never an option or historians might well add, a counterfactual worth pursuing.[78]

Once expenditures by the state are reconfigured as positive (or at least unavoidable for macro-economic growth) then, in retrospect, rates of development and take-up of advanced technologies and urban systems of production by businessmen and investors during as ostensibly revolutionary period in British economic history, cease to appear anything like as

75 Ventura and Voth, "Debt into Growth" and A. Digby and C. H. Feinstein eds., *New Directions in Economic and Social History II* (Basingstoke: Macmillan, 1992), 37-48.

76 P. K. O'Brien, "Contributions of Warfare with Revolutionary and Napoleonic France to the Consolidation and Progress of the British Industrial Revolution", LSE Department of Economic History Working Paper, 150 (2011); Prados De La Escoura, *Exceptionalism and Industrialization,* 35-69.

77 R. Stern and C. Wennerlind eds., *Mercantilism Reimagined: Political Economy in Early Modern Britain and its Empire* (Oxford: Oxford University Press, 2013); Vries, *State, Economy and the Great Divergence*; T. Hutchison, *Before Adam Smith: The Emergence of Political Economy 1662-1776* (Oxford: Oxford University Press, 1988).

78 K. Tribe, "Mercantilism and Economics of State Formation," in L. Magnusson ed., *Mercantilist Economics* (Boston: Kluwer, 1993), 175-86.

entrepreneurial and historically remarkable as Anglo-American historiography has, for too long, maintained. Indeed the way back into a properly conceptualized and contextualized historical analysis of The First Industrial Revolution is already underway. By locating this conjuncture in long-run global economic history and (as the new Cambridge School in the history of the political economy advises) by contextualizing its place in discourses of the day, historians are now better placed to assess its significance. After all, at the time, most classical economists recognized there was nothing particularly "progressive" about the country's aristocratic and wealthy elites.[79] Majorities (among the owners and controllers of property rights to the nation's cultivable land, sub-soil minerals, urban sites and real estate, transportation systems, commercial and distribution networks, banks and other forms of financial intermediation, industrial buildings, plant and machinery, human and professional capital) reinvested rather low proportions of the rents accruing to them from industrialization.

Predictably, generations of a patriotic history profession researching into the Island's agriculture, commerce and industry and in touch with the records of firms and the biographies of exceptional men of wealth, have published what has now aggregated into a library of case studies that displays a more favourable impression of British landowners, farmers, merchants, industrialists, bankers, professional experts and others with surpluses to save and invest in the new technologies and urban systems of production that came on stream after Britain's decisive victory for external security with imperial hegemony in the Seven Years War. But did British capitalists or culture manifest a national Geist or Kopf for risk-taking and improvement that was very different from anything displayed by their ostensibly more cautious counterparts on the mainland?[80]

Of course, numerous and well documented examples of commendable foresight, perseverance, risk-taking, innovation and entrepreneurship, particularly for leading industries, can be drawn from the rich historiography of the First Industrial Revolution.[81] Nevertheless, the research by the recent generation of economic historians has constructed a statistical base in order to engage with potentialities for illumination derived from macro-economic modelling. This programme in economic history (as Robert Allen's recent synthesis shows), has seriously qualified (if not degraded) the notion that an insular "culture" ordering economic behaviour on the British Isles could be represented as exceptionally enterprising.[82] Looking retrospectively at The Industrial Revolution configured as a macro-economic event, increasingly embedded in a wider world economy, several statistically validated arguments now suggest that (within an environment of incomparable security provided and sustained by the Hanoverian state for the nation's businessmen and wealthy elites), the take-up of new technology and investment in the construction of urban agglomerations and formation of the

79 G. Stedman-Jones, *An End to Poverty? A Historical Debate* (London: Profile Books, 2004) and E. Rothschild, "The English Kopf," in Winch and O'Brien, *The Political Economy of British Historical Experience*.

80 Rothschild, "The English Kopf," 31-60 and Jacob, *The First Knowledge Economy*, 3.

81 F. Crouzet, *The First Industrialists: The Problem of Origins* (Cambridge: Cambridge University Press, 1985) and McCloskey, *The Bourgeois Virtues*.

82 Allen, *The British Industrial Revolution*.

social overhead capital required to realize the potential of technologies that appeared after the Seven Years War, seems anything but enlightened or exemplifying bourgeois virtues and dignity.[83]

Unimpressive is my post hoc but defensible representation because nothing in the macro-economic data currently available suggests that: (a) rates of return accruing to owners of property declined during the Industrial Revolution, (b) that gains from investment in the capital formation required for faster and more extensive industrialization, combined with urbanization were being steadily eroded by rises in real product wages that exceeded or even converged upon the observed increase in labour productivity, or (c) that warfare was anything other than an integral part (rather than a costly diversion) from the whole historical process. On the contrary, macro-economic trends (as currently measured for this century of revolution) all look promotional for higher rates of saving, investment and innovation. For example, (and after falling below the 10% mark during the recession in economic activity that surrounded crisis and war with England's Thirteen colonies in North America) average rates of return on all forms of capital other than agricultural land, fluctuated cyclically, but had doubled before the mid-nineteenth century. By then even real rents from farmed land (the sector in relative decline) had risen by nearly 50%. Over the century that succeeded the Seven Years War, average real wages passed through three cycles or phases: slow improvement (c. 1761-1800), virtual stasis (1800-20) and upswing (1820-51) and reached a point around mid-century which stood some 45% above their initial level.[84]

Meanwhile, labour productivity had followed a different trajectory and a faster rate of increase to arrive at a level 87% above its base line average. Classical features of all industrial revolutions, namely, higher rates of growth in labour productivity, emanating from general purpose technologies, combined with increasing returns derived from the agglomeration of production in towns probably became more evident during the First Industrial Revolution than they had already been during the Italian Renaissance, the Dutch Golden Age and earlier efflorescences.[85] Yet the British case was marked by a uniquely gradual rate of change, a slow take up of new technology and as many historian continue to maintain a "deplorably" low rate of investment in the housing and infrastructure of towns required to support a more rapid and less immiserising transition to industrial society.[86]

This feature of the First Industrial Revolution rather than machinery and factories aroused condemnations from visitors from the mainland as well as generations of British reformers concerned with the health of towns and the conditions of those whose labour made

83 Mokyr, *Enlightened Economy* and D. McCloskey, *Bourgeois Dignity: Why Economics Can't Explain the Modern World* (Chicago: Chicago University Press, 2010).

84 Allen. "Engles Pause." For Clark's data, see Clark, *A Farewell to Alms*. C. Feinstein, "Pessimism Perpetuated: Real Wages and the Standard of Living in Britain during and after the Industrial Revolution," *Journal of Economic History*, 58 (1998), 625-58.

85 J. L. Van Zanden, *The Long Road to the Industrial Revolution: The European Economy in a Global Perspective 1000-1800* (Leiden: Brill, 2012) and Goldstone, "Efflorescences and Economic Growth in World History."

86 N. Crafts, "British Industrialization in an International Context," *Journal of Interdisciplinary History*, 19 (1989), 415-28.

the transition both possible and necessary.[87] Amelioration and jack up in investment rates took a long time to achieve, partly because the fiscally emasculated state that emerged from the Napoleonic wars did not raise the taxes required to do much to help other than continue to protect the realm's commerce and expanding empire overseas; partly because average real wages (and aggregate demand) increased very slowly, but partly because British economic elites, with enviable capacities to save, reinvested such small proportions of the rising share of the "rentier type" income that they obtained from their stakes in prior and often inherited ownership of property rights during a period of transition to an urban industrial economy.[88] Although the commendable examples of enterprise behind the riskier and innovatory investments in industry and commerce that appeared during the period testify to the entrepreneurship of some Britons, their laudable achievements need to be contextualized within macro-economic frameworks, recently constructed by Allen, Clark, Crafts, Harley, Mokyr, Voth and other cliometricians who have, in effect, reconfigured the Industrial Revolution as a precocious but unremarkable and rather predictable transition in the long global history for the accumulation of useful and reliable knowledge.[89] Furthermore, very few economists of economic historians now regard this famous conjuncture as a paradigm for comparable changes that could be followed elsewhere, or believe that standards of living or labour productivities currently displayed by the world's industrial market economies would look different, but for the transformation that occurred in Britain between 1763 and 1846.[90]

In so far as the discovery and development of new technologies for industry, transportation and agriculture that appeared during this period can be linked historically to an evolving base of systemic knowledge about the natural world, the slow accumulation of that kind of knowledge has been realistically depicted as Eurasian rather than British in origin.[91] Britain's advantages resided more in the development and improvement and diffusion of technology than in discovery itself.[92] Some historians continue to argue that in a European and perhaps more plausibly, in an Asian context, British "culture" became more receptive to an intermingling of science with business, with religion and with politics than was the case elsewhere across Eurasia.[93] Studies of several contexts for the advance and diffusion of

87 Humphries, *Childhood and Child Labour* and Riello and O'Brien, "Reconstructing the Industrial Revolution."

88 P. K. O'Brien, "Aristocracies and Economic Progress under the Ancien Regime," in P. Janssens and B. Yun-Casalilla eds., *European Aristocracies and Colonial Elites: Patrimonial Management Strategies and Economic Development, 15th-18th Centuries* (Aldershot: Ashgate, 2005), pp. 247-64.

89 N. Voigtländer and H.-J. Voth, "Why England: Demographic Factors, Structural Change and Physical Capital Accumulation during the Industrial Revolution," *Journal of Economic Growth*, 11 (2006), 319-61.

90 But see Landes, *The Wealth and Poverty of Nations* and idem, *The Unbound Prometheus: Technological Change and Industrial Development in Western Europe from 1750 to the Present* (Cambridge: Cambridge University Press, 2nd edn., 2002).

91 A. Bala, *The Dialogue of Civilizations in the Birth of Modern Science* (Basingstoke: Palgrave Macmillan, 2006) and A. Pacey, *The Maze of Ingenuity Ideas and Idealism in the Development of Technology* (Cambridge Mass: M.I.T. Press, 2nd edn., 1992).

92 J. Mokyr, *The Lever of Riches: Technological Creativity and Economic Progress* (Oxford: Oxford University Press, 1990).

93 M. Jacob, *Scientific Culture and the Making of the Industrial West* (Oxford: Oxford University Press, 1997); idem, *The First Knowledge Economy*; I. Inkster, "Potential Global: A Story of Useful and Reliable Knowledge and Material

useful and reliable knowledge in France, Italy and even Spain, has, however, made it more difficult to accept Anglocentric assertions that mainland European monarchs, aristocracies ecclesiastical and political elites, and especially the military, were somehow less "rational" and open to the potentialities of new knowledge than their counterparts off-shore.[94] That debate seems to be something of a hangover from religious controversies over the reformation, including memorable, but unproven, theories about the positive connexions between Protestantism and entrepreneurship. Protestantism and hard work, as well as Protestantism and science, lifted uncritically from Max Weber's and Robert Merton's seminal hypotheses.[95] It will surely be difficult to demonstrate that the urban and commercial cultures of Europe's (even Asia's) maritime cities could be depicted as discernibly less rational, calculating and utilitarian than cultures operating in British towns, embodied in British educational institutions, or evident in British publishing and information flows.[96] Roy Porter and Joel Mokyr have made claims for the exceptionalism of a British enlightenment, that contrasts with another controversial interpretation of the "long 18th century" in British history as a period marked by the persistence of an *ancien regime* presided over by an autocratic, aristocratic and confessional state. Cultural turns by nations, cities or elites towards progress are difficult to expose, let alone measure.[97]

Early in the eighteenth century, European visitors did, however, recognize that British industry was moving ahead in certain spheres of industrial technology. Indeed, several governments engaged in espionage in order to repair gaps as they opened up, particularly for technologies with military potential.[98] The appearance of British machines on the mainland even in Catalonia occurred rather rapidly before the outbreak of the French Revolution and the long interlude of destructive warfare that arrested diffusion to and across the mainland, 1791-1815. Within Europe technological advances tended to appear, moreover, in branches of industrial production which had reached a certain scale and diversity in production. In some well-known British cases (cotton and bar iron are prime examples) that occurred after processes of import substitution. Foreign products obtained and pioneered access to the realm's home market and that tempted British businessmen to press for protection and to engage in a search for indigenous ways of satisfying first domestic, then imperial, and eventually, foreign demand. The process involved the creation, by a sympathetic mercantilist state, of helpful matrices of legislation and fiscal incentives surrounding commodity and

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Progress in Europe 1474-1914" (unpublished paper, University of Nottingham Trent).

94 W. Clark et al. eds., *The Sciences in Enlightened Europe* (Chicago: Chicago University Press, 1999) and L. Hilaire-Perez, *L'invention technique au siècle des lumieres* (Paris: Albin-Michel, 2000), but vide Jacob, *The First Knowledge Economy*.

95 J. Brooke, *Science and Religion: Some Historical Perspectives* (Cambridge: Cambridge University Press, 1991).

96 Jacob tries (vide Jacob, *The First Knowledge Economy*) but vide P. K. O'Brien et al. eds., *Urban Achievement in Early Modern Europe: Golden Ages in Antwerp, Amsterdam and London* (Cambridge: Cambridge University Press, 2001).

97 R. Porter, *Enlightenment: Britain and the Creation of the Modern World* (London: Allen Lane, 2001) and J. Clark, *English Society 1660-1832: Religion, Ideology and Politics during the Ancien Régime* (Cambridge: Cambridge University Press, 2nd edn., 2000).

98 J. Harris, *Industrial Espionage and Technology Transfer: Britain and France in the Eighteenth Century* (Aldershot: Ashgate, 1997).

labour markets for Britain and its imperial possessions overseas.[99]

Technological progress depended, above all, on the prior accumulation of a skilled and mobile industrial workforce or artisans and craftsmen. To explain how, when and why the British economy managed to build up the range of propensities and skills required to promote and carry breakthroughs and improvements in technological knowledge through a necessary stage of development to then point of commercial viability has not been easy. Economic theory is not particularly helpful in explaining the formation of human capital, but economic history is generating promising findings from the records of Europe's urban gilds, and their connexions to the rise, embodiment and maintenance of skills among European workforces. Alas, that programme is not yet at a stage where valid contrasts across continents, countries, regions and towns can be discerned and explained.[100]

For Eurasia relevant contexts for human capital formation were invariably urban. On the Isles, London, Bristol, Nottingham, Birmingham, Glasgow and even Dublin all became important locations for the development of skilled workforces. Immigrant German, Flemish, Dutch and Hugenot craftsmen, merchants and financiers, clearly played an important role in starting and sustaining the process in Britain. Skilled men could be attracted from the mainland to a kingdom that promised security from external aggression, religious toleration and which, from time to time, offered them royal protection and subsidies. When they developed interests in trade with the Americas, Africa and Asia, they could be assured of protection from the Royal Navy. European settled and, as part of extended families and diasporas, maintained links with kin and communities embodying useful knowledge on the mainland. In an age when the diffusion and adaptation of technology occurred basically through the migration of skilled and professional manpower, the obvious attractions of a shorter or longer domicile in English towns was reinforced by warfare and religious persecution on the mainland.[101]

Conclusions: Deconstructing and Reconstructing the First Industrial Revolution

After the Seven Years War when the British economy had reached a plateau of possibilities, it passed through a century of accelerated growth with structural change that merits the appellation of The First Industrial Revolution. This long cycle, together concluded

99 P. K. O'Brien et al., "Political Components of the Industrial Revolution: Parliament and the English Cotton Textile Industry 1660-1774," *Economic History Review*, 44 (1991), 395-423; and J. Inikori, *Africans and the Industrial Revolution in England: A Study in International Trade and Economic Deveolopment* (Cambridge: Cambridge University Press, 2002).

100 S. Epstein, "Transferring Technical Knowledge and Innovating in Europe," LSE Department of Economic History Working Paper 01-05 (2005), 1-39 and S. Epstein and M. Prak, *Guilds, Innovation and the European Economy 1400-1800* (Cambridge: Cambridge University Press, 2008) and P. Wallis, "Labour Markets and Training/Apprenticeship," in Floud, *Cambridge Economic History of Modern Britain I*, new edn., 178-211.

101 J.-L. Van Zanden, *The Long Road to the Industrial Revolution: The European Economy in Global Perspective 1000-1800* (Brill: Leiden, 2009).

with the wars against Revolutionary and Napoleonic France, carried the Island on to the clear position of competitive advantage it enjoyed over the economies of Continental Europe and the rest of the world between 1846 and 1873.

That Victorian "moment" of economic dominance took centuries to mature, looks brief and was based to some significant degree upon natural advantages and naval power. Britain's technological hegemony was, it seems, proximately European and historically Eurasian in origin, confined for decades to textiles, metallurgy and engineering, and destined to pass away through the traditional and familiar workings of diffusion and convergence processes.[102]

In order to help scholars, publics, politicians and the mass media to comprehend The First Industrial Revolution and the rather rapid convergence of Western Europe into an inter-related and ultimately integrated set of highly successful industrial market economies, it is now appropriate to place the British transition within much longer time spans and wider geographical frames that include Africa, the Americas and East Asia, as well as the mainland.[103] In Hodgson's long stream of time and the recently revealed pre-modern "world of surprising resemblances", the Industrial Revolution can be re-contextualized as a precocious but not that remarkable conjuncture in mankind's escape from diminishing returns endemic to organic economies. Real growth (florescence's) in labour productivity and incomes per capita had occurred in other places and other times for centuries prior to the Seven Years War, but before long natural disasters, geopolitical shocks and Malthusian checks returned complex but organically based urban economies to stasis or very slow growth. Geography ensured that the Isles were predestined to avoid the first. In the wake of an interregnum of civil war and republican rule, a properly funded Royal navy emerged to protect the economy from the second. Then a gradual diffusion of new technologies and inorganic sources of energy turned out to be sufficient to confound Malthus and produce a First Industrial Revolution.[104] Britain escaped first. Western Europe and its European offshoots overseas soon followed. High and rising standards of living can now be observed in many regions of an integrating world economy. In this frame of historical reference, being first matters a lot less than the North-South divide and the persistence of mass poverty. For solutions to that problem there is no British model, no distinctively British enlightenment and no need for patriotic histories of a Frist Industrial Revolution, proclaiming Britain, Holland or any other nationally constructed location or culture as the locus or origin, and certainly not as the paradigm for modern economic growth. After all, our colleagues in art history tell us that the Florentines are no longer the proud possessors of the Renaissance.

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102 M. Teich and R. Porter eds., *The Industrial Revolution in National Context: Europe and the USA* (Cambridge: Cambridge University Press, 1996) and K. Bruland ed., *Technology Transfer and Scandinavian Industrialisation* (Oxford: Berg, 1991) and Griffin, *Short History*.

103 For an eloquent, but highly polemicized elaboration of Hodgson's argument, see J. Hobson, *The Eastern Origins of Western Civilisation* (Cambridge: Cambridge University Press, 2004).

104 The Confounding of Malthus is the inspiration for Broadberry, *British Economic Growth* and for a discussion of Clark's "Malthusian Views," in a special issue of the *European Review of Economic History* devoted to Clark's *Farewell to Alms.*

While modern Chinese and Japanese scholars now correctly observe neither English (nor European) history can be represented global destiny.[105] And, to repeat, Marshal Hodgson told us four decades ago that "Without the cumulative history of the whole Afro-Eurasian Oikoumene of which the occident has been an integral part, the Western Transmutation would be almost unthinkable."[106] The British Industrial Revolution is not separable from the global context in which it took place.[107]

105 R. Bin Wong, "The Political Economy of Agrarian Empire and its Modern Legacy," in T. Brook and G. Blue eds., *China and Historical Capitalism: Genealogies of Sinological Knowledge* (Cambridge: Cambridge University Press, 1999), 210-45, and K. Sugihara, "The East Asian Path of Economic Development: A Long Term Perspective," in G. Arrighi ed., *The Resurgence of East Asia: 500, 150 and 50 Year Perspectives* (London: Routledge, 2003).

106 Hodgson, *Rethinking World History*, 68.

107 Allen, *Global Economic History* should agree?

Questioning Leviathan: Restructuring the State in Britain since 1970

Martin Daunton*

Abstract. The British state has undergone a number of major transformations – with the decline in 'mercantilist' policies in the early nineteenth century, and the step change in government spending in the early twentieth century. The aim of this paper is to consider the most recent restructuring the state since the 1970s. The first half of the paper indicates some of the major changes, such as the reduction in the level of public capital ownership, and the way that the government carries risk for private investors. It indicates that the level of public spending and taxation was not reduced, but that spending was increasingly dominated by social transfers, and the tax system was remade. There was a changed relationship between private and social costs and benefits, so that individuals paid more for what were perceived as personal rather than social benefits, such as fees for higher education. This change was associated with a stress on the benefits of incentives over equality. In the second half of the paper, various explanations for the changes are considered. The role of path dependency, that is the way that policy was shaped by existing institutions is considered, and the interplay of different stakeholders. Other factors were changes in the structure of the economy, the decline in profits, the collapse of the Bretton Woods regime, the changed relationship between taxes and the franchise, the cultural shift to an ideology of choice, the emergence of market populism.

The British state secured a remarkably high level of trust with an equally high level of compliance by tax payers in the course of the nineteenth century, in contrast to the situation in many other European countries – an outcome that I analysed in *Trusting Leviathan: The Politics of British Taxation 1799-1914*. My aim was to show how British governments managed to make payment of taxes legitimate and to secure consent after the crises of the early nineteenth century. At the end of the Napoleonic wars, the British state seemed, in the eyes of many critics, to involve a transfer from poor to rich, from active producers to idle rentiers: bondholders received interest, landowners benefited from the Corn Laws, and hangers on at court secured pensions and sinecures. The income tax expired in 1816 and taxes fell on imports and excise duties which hit consumers and producers. The unreformed electoral system meant that the beneficiaries of this fiscal regime were in control, which led to demands for parliamentary reform to improve scrutiny of accounts. The criticism of 'old corruption' was possibly exaggerated – but it was widely believed, and led to threats from radicals, Chartists, and the Anti-Corn Law League. Clearly, it was necessary to rebuild consent, and in *Trusting Leviathan* I tried to show how the task was carried out, above all by Robert Peel and William Gladstone. They created a tax regime that could be portrayed as neutral by cutting excise and import duties and reintroducing the income tax; they built on parliamentary reform to create a system of parliamentary approval and scrutiny with very

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clear principles for voting expenditure; they worked closely with taxpayers in assessing and collecting taxes; and they balanced budgets to pay off debt. The result was the creation of a legitimate fiscal regime that could be used to finance both welfare and warfare by the early twentieth century: having created a sense of fairness and equity, it was then possible to increase spending by the state. I showed in *Just Taxes: The Politics of Taxation in Britain 1914-1979* how the fiscal regime survived the traumas of the First World War in better shape than most other countries, and provided social insurance ahead of the great depression.[1]

Of course, the terminal point of *Just Taxes* was significant, marking the election victory of the Conservatives under the leadership of Mrs Thatcher. I did suggest that the fiscal regime that had been constructed since 1842 was already coming under strain in the 1970s, and that a new era was opening in which Leviathan was questioned rather than trusted. But it was only a hint, and the change in attitudes deserves much more attention. Not only in Britain, but in many other countries, there was a fundamental shift in the role of the state from around 1973, marked by a slower rate of economic growth in many countries, the collapse of the Bretton Woods regime, and the impact of the oil shock. As after the Napoleonic Wars, concerns started to mount about the level of taxation and of public expenditure and how to reduce them. There was a shift from trusting to questioning Leviathan which was just as striking as other major shifts such as the move from mercantilism to free trade in the early nineteenth century, or the rise of the welfare state in the twentieth century. It is a process that we are still living through as the present Conservative government pursues a policy of austerity and attempts to shrink the state. In this paper, I offer some preliminary thoughts on the major lineaments of change and some suggestions of how it might be explained.

I

I will start with one recent example of a shift in attitudes to the state and to public expenditure: the apparently mundane matter of sewers in London. In fact, the construction of the London sewer system was one of the great achievements of the Victorian era. The Metropolitan Board of Works secured permission in 1858, and the task was carried out by Joseph Bazalgette who built the embankment along the Thames, with its 'intercepting' sewers to capture foul water before it entered the river, with massive pumping stations and treatment plants down-stream to take the sewage far from London. It ended the 'great stink' and removed the threat of cholera – and cost the huge sum of £4.1 m. There was no thought that the investment should be private and it was taken for granted that the task was a public responsibility. The question remained of how the public investment should be financed, and

1 M. Daunton, *Trusting Leviathan: The Politics of Taxation in Britain, 1799-1914*, Cambridge: Cambridge University Press, 2001 and *Just Taxes: The Politics of Taxation in Britain, 1914-1979*, Cambridge: Cambridge University Press, 2002.

who should pay.[2]

The role of commissions of sewers was defined in the Act of Sewers of 1531 which laid down their powers to deal with land drainage and flooding rather than the removal of sewage, which was largely dealt with by cesspits and 'night-soil men'. Eventually, there were five Commissions north of the Thames and two on the south, as well as a separate Commission for the City of London; they were merged into a single Metropolitan Commission of Sewers in 1849, which passed to the new Metropolitan Board of Works in 1856. The problem was that this system was only designed to deal with drainage and not with foul water which was increasingly entering the system with the growing use of water closets. There were also serious difficulties of finance, for only houses with a connection to the sewer were liable to pay, and householders could appeal to the Quarter Sessions not to pay; they were treated as individual consumers of a service like gas, rather than as contributing through local taxation to collective investment in the health of the metropolis.

In the parliamentary debate on the construction of the new sewer, the Chancellor of the Exchequer, William Gladstone, remarked that one issue was whether it was a matter of national taxation, given that London was the capital and so many national institutions were based in the metropolis. But Gladstone was clear that it was a local issue, and that any other approach would undermine the 'municipal principle … of which we are all so proud, as one of the chief characteristics of our constitution'. In his opinion, the principle of self-government could not be abandoned as defective with the costs handed to the country at large. But he also admitted that the MBW did not have the resources needed for the expensive new sewers: the capital cost could not come from its income; and an annual rate did not provide sufficient security to borrow large sums, and any loans would incur high interest. Gladstone cut through the dilemma: parliament should impose a new sewage rate of 3d in the pound on all inhabitants of London to be used only for this purpose and without any right of appeal, for a period of 40 years; the income would go to the MBW which would also be given a guarantee from the government which would allow it to borrow from institutions not otherwise permitted to buy bonds; the flow of income would allow borrowing on this security at 4 per cent and also provide a sinking fund to pay off the loans at the end of the period. In Gladstone's view, this approach would assist the MBW without breaching the principle of self-government, for the cost would not be passed to the country at large, and it was unlikely that the Treasury would incur any charge. At the same time, the MBW should be 'perfectly unshackled and untrammelled', allowed to carry out its plans without interference from the Treasury. The scheme was a typical Gladstonian construct of financial prudence, debt redemption, and economy to utilise private funds for public purposes.[3]

The Bazalgette scheme served London well for the next 150 years, but by the early

2 This account is based on Stephen Halliday, *The Great Stink of London: Sir Joseph Bazalgette and the Cleansing of the Victorian Metropolis*, Stroud: Sutton Publishing, 1999.

3 *Parliamentary Debates, Commons,* 3rd ser., vol. 151, 15 July 1858, speech by Gladstone on the first reading of the Metropolis Local Management Act Amendment Bill, cols. 1508-16.

twenty-first century needed to be augmented by a new London 'super sewer' that is estimated to cost £4.2 bn at 2011 prices. The new scheme was given parliamentary consent in 2014, and a financial deal was awarded in July 2015. The terms were radically different from Gladstone's approach of 1858, and indicate a major shift in the role of the state.

It is not a public investment, but the responsibility of Thames Water, a private concern. The history of this company reflects some of the changes in the nature of the British state. In the early nineteenth century, London's water was supplied by a number of private companies, and the initial public response to the threat to health caused by pumping polluted water from the Thames was regulation of minimum standards by the Metropolis Water Act of 1852. In 1869, a Royal Commission went further and recommended public ownership – an approach that was compatible with Victorian liberalism as a way of protecting consumers. After all, the Railways Act of 1844 authorised the state to purchase the railways after 21 years if they were not behaving fairly to the consumers, and the Telegraph Act of 1868 paved the way to the nationalisation of the telegraphs on the hands of the Post Office. Many local authorities took utilities into public hands, and the MBW was itself eager to do the same approach. The immediate response to the Royal Commission was to tighten up regulation in 1871, but the MBW promoted unsuccessful bills between 1878 and 1886 to allow them to offer a municipal water supply. Their successor, the London County Council also tried in 1895, but neighbouring county councils were fearful of its power and the eventual outcome was the Metropolis Water Act of 1902 that created a new, single purpose body drawn from existing local authorities.[4]

In 1989, the Metropolitan Water Board was privatised by the Thatcher government, and Thames Water is now owned by Kemble Water Holdings Ltd, a consortium formed in late 2006 by the Australian-based Macquarie Group's European Infrastructure Funds, with major shareholders including the Abu Dhabi Investment Authority (9.9%) and the China Investment Corporation (8.7%). The consortium is based in Luxembourg, exploiting a tax haven and paying large dividends; meanwhile, water bills have risen 50 per cent in real terms since the industry was privatised. The justification of the rising cost of water and sewage charges is the need for large-scale investment to replace worn-out, leaking water mains. But this raises an important consideration in regards to the finance of the new super sewer which is not funded from the balance sheet of Thames Water.[5]

The investment will be very large, and as in 1858 there is the issue of how it is to be funded. Of course, it could be owned and built by the government as was traditionally the case with public sector infrastructure, and as in 1858. Ian Byatt, a former economic adviser to the Treasury and regulator of the water industry, argued that 'it should be financed directly by government borrowing, which would be much cheaper than special project finance'. He

4 A K Mukhopadhyay, 'The Politics of London Water', *London Journal*, 1 (1975).

5 OFWAT, The completed acquisition of Thames Waterholdings Plc by Kemble Water Ltd, May 2007 at http://www.ofwat.gov.uk/wp-content/uploads/2015/11/pap_pos_tms_acqtmskemble.pdf; Change in minority shareholders at Thames Water, 12 Dec. 2011 at http://www.macquarie.co.uk/mgl/uk/about/news/2011/12122011; Santander sells Thames Water stake to China, *Daily Telegraph*, 20 Jan. 2012.

pointed out, and even bankers associated with the project agreed, that governments can borrow cheaper than anyone. However, the Treasury argued that public responsibility would be poor value and rejected the option, against the view of the National Audit Office that a private sector solution would be poor value for the taxpayer. The political attraction of a private-sector solution was that the investment would be kept off the balance sheet. As a result, Thames Water set up a separate company – Thames Tideway Tunnel – that would 'own, finance and deliver' the sewer, and then supply sewerage services to Thames Water on a 125-year concession. This separate company is to be financed by Thames Water (a third) and by the Bazalgette consortium led by the German insurer Allianz and other major finance houses. The role of the government is to act as the insurer of the project, bearing the brunt of any cost overruns – in other words, its role is to take on the risk of the private sector and not, as in 1858, to assist the public sector in securing private funds on good terms.

In 1858, the capital cost was covered by a compulsory sewerage rate for 40 years to cover interest payments and to create a sinking fund. In 2015, customers will pay a surcharge on their bills of £80-a-year from the start of the project, which could last indefinitely. Thames Water argues that competitive process and terms of the deal will minimise the impact, and that the approach has the virtue of 'balancing the interests of customers, investors and taxpayers'. An alternative way of looking at the deal is that taxpayers or customers are involved in providing guarantees against risk of cost overruns, accidents and financial risks from credit crashes which 'the government hope will not be needed but if they are they could be very expensive'. In other words, the costs are borne by the consumers, the state covers the risks, and the benefits are taken by financiers. In 1858, the role of the state was to assist a public authority in securing funds from the private sector; taxpayers paid a specific rate to cover interest and repay capital; and the public sector owned and operated the asset. Naming the consortium after Bazalgette pays deference to a great engineer, but not to the principles of Gladstonian fiscal rectitude that underpinned his scheme.[6]

II

This comparison between 1858 and 2015 brings out some of the major changes in the relationship of the state and market. The first point is that the state has ceased to provide infrastructure on any scale. In the past, the state provided infrastructure up-front at low interest rates, issuing bonds to finance fixed capital investment – both by local government such as Joseph Chamberlain's schemes in Birmingham in the last quarter of the nineteenth century, or by the Attlee government after the Second World War. Public sector net investment continued to rise after war, from 2 per cent of GDP in 1949/50 to a peak of 6.1

6 M. Kavanagh, 'Consortiums for London Super Sewer', *Financial Times*, 26 Feb. 2015; G. Plimmer, 'London's "Super Sewer" Faces New Controversy over Procurement', 12 July 2015; 'Allianz Group Wins Contest to Invest in London "Super Sewer"', *FT*, 14 July 2015; 'Critics Decry Costs of London's £4.2bn "Super Sewer"', *FT*, 26 July 2015; J. Grant and M. Ponder, 'Financing for London's "Super Sewer" Gets Go-ahead', *FT*, 24 Aug. 2015.

per cent in 1969/70. A major change then occurred in the 1970s, with a retreat of the British state from fixed capital investment. Public sector net investment was down to 0.6 per cent in 1999/2000.

Secondly, the state was unwilling to pay for up-front financing of capital projects. Private Finance Initiatives were introduced in 1992 so that the private sector built and owned an asset such as a hospital and sold a stream of services to the public sector. The asset was therefore kept off the balance sheet which helped to hold down the public sector borrowing requirement. Although PFIs were initiated by the Conservatives, they were continued by the Labour government after 1997 in the belief that efficiency gains would cover the charge to the private sector, and that it would allow the provision of infrastructure that would otherwise be difficult to secure. What it entailed, as we have seen in the case of the London super-sewer, was the state underwriting of private risk. [7]

The third major change was divestiture of existing stock. Privatisation of water, gas, electricity and the railways produced a one-off payment to the government which was not used to reinvest in fixed capital; it also removed any obligation for future investment. The largest single transfer of assets was the sale of council houses to tenants under the 'right to buy' programme. Sales were around 100,000 a year between 1970 and 1973 during Heath's government; the figure fell to 4,000 pa under Labour in 1974-6; and then rose to 130,000 pa between 1980 and 1990 under Thatcher. The houses were built and owned by local authorities who received 20 per cent of the proceeds; the remaining 80 per cent went to the central government to pay off debts rather than being invested in new social housing. The construction of new public housing declined from a peak of 151,824 in 1976 to 1,058 in 1998.[8]

The result was a marked change in the nature of the British state (see table 1). The Thatcher governments did not 'roll back the state' in terms of tax revenues and expenditure. In 1978, the final full year of the Labour government, total tax revenue as a percentage of GDP was 32.7 per cent, before rising to a peak of 38.5 per cent in 1982. By the time, Mrs Thatcher left office in 1990, total taxation had fallen to 35.5 per cent of GDP, still above the level when she came to power.[9] What the Conservative governments of Thatcher and Major did achieve was a remarkable reduction in the state's share of assets – a deliberate policy that shaped the reaction to the financial crisis after 2008.

7 M. Chick, 'The State, Public Finance and the Changing Response to Investing in the Future: The Case of the United Kingdom since the 1970s', in M. Buggeln, M. Daunton and A. Nutzenadel (eds.), *Leviathan After the Boom,* Cambridge: Cambridge University Press, 2016, xx.

8 *Ibid*.

9 OECD*, Revenue Statistics 2012*, Paris: OECD Publications 2012, 97-8.

Table 1. Public sector net worth as a percentage of GDP

1970-1	41.7
1974-5	78.0
1980-1	77.1
1988-9	82.4
1997-8	14.7
1999-2000	15.6

Source: M. Florio, *The Great Divestiture: Evaluating the Welfare Impact of the British Privatizations, 1979-1997,* Cambridge Mass and London: MIT Press, 2004, 279.

Although there was a brief 'return to Keynes' and the use of fiscal stimulus and public investment after the G20 summit in London in 2009 during the premiership of Gordon Brown, the approach was rejected by G20 at Toronto in June 2010 which announced a commitment to 'growth friendly fiscal consolidation' or, more bluntly, austerity. Rather than employment or growth, the priority became debt sustainability and reducing what were considered to be excessive deficits. The dominant narrative was that the problem was the size of the state and the national debt in a strategy of 'bait and shift': instead of blaming the financial sector and weak regulation, the blame was placed on the state which was seen as the problem and not the cure.[10]

The explanation for the turn from Keynes to fiscal consolidation was in part the dominance of a particular style of economic reasoning, based on mathematical modelling with rational agents; the strength of anti-state sentiment in the United States; and in Germany a concept of the state as being about enforcing rules and competition. Politicians seized upon the dubious statistics and ill-informed history of Carmen Reinhart and Ken Rogoff that a growth in the debt to GDP ratio above 90 per cent would lead to a loss of 1 per cent of growth, or of Alberto Alesina and Silvia Ardagna that austerity with public spending cuts rather than tax increases could be expansionary. These propositions provided George Osborne in Britain and Paul Ryan in the United States with justification for their ideological attack on state spending. Closer inspection of the data suggested serious flaws. It made little sense to aggregate all countries in all circumstances, without asking about the precise circumstances that led to high debt. The debt ratio in Britain was highest in periods of war, which sometimes led to low growth – as in the First World War – and sometimes to high growth – as in the Second World War. Sometimes the debt was serviced by high levels of taxation of productive wealth and income which might harm growth; sometimes by taxation that shifted income to poorer members of society and increased consumption. Similarly, a cut in public spending to balance the budget might possibly lead to growth if debt, interest rates and taxation were high (as in Italy), but not obviously in other circumstances. As a result, fiscal stimulus ended without taking advantage of remarkably low interest rates that

10 Mark Blyth, *Austerity: The History of a Dangerous Idea,* New York: Oxford University Press, 2013, ix, 5, 13; B. Eichengreen, *Hall of Mirrors: The Great Depression, the Great Recession, and the Uses and Misuses of History,* New York: Oxford University Press, 2015, 340.

could have provided public investment to compensate for lower consumer spending.[11]

A second point follows from the decline in public capital expenditure: the emergence of a transfer state**.** Social security spending rose from around 15 per cent of public spending after the war to 20 per cent in 1970 and 30 per cent in 1986, and then remained stable; health rose from 9.3 per cent of public spending in 1949-50, immediately after the creation of the National Health Service, to 18.3 per cent in 2007-8. This decline in capital expenditure and rise in transfer payments meant that the ratio of current to investment spending moved from 10:1 in 1958-9 to 19:1 in 2007-8.[12] The adoption of austerity means that the major issue is how to hold down or reduce the level of transfer payments, which essentially entails cutting in-work benefits and protecting state pensions which since 2010 have a 'triple lock' of the highest of inflation measured by the retail price index, average wages or 2.5 per cent.[13]

This leads to a third point: the changed relationship between private and social costs and benefits. The change is apparent in a number of ways. User charges have been introduced for services which were formerly provided free of charge, sometimes for what is called a 'premium service' such as the swifter processing of visas or planning applications. Hence the University of Cambridge, in developing a new area in the north-west of the city, was required to pay the cost of employing a planning officer to consider its schemes or face inordinate delays, through what is called a 'planning performance agreement'. Similarly, developers wishing to proceed with projects that have implications for the historic environment can pay Historic England for what is called an 'enhanced advisory service'. Any conflict of interest is strenuously denied, for the officials are not directly employed by the developers – and Historic England has little option expect to charge give the cuts in its budget. Not everyone is content by the apparent undermining of independence and the ability of some developers to purchase a better service which some might consider to be a public service paid from taxation.[14] Curiously, there are some exceptions to user charges. Although a charge was introduced for entry to many national museums in the 1990s, it was abolished by Labour in 2001 and has not (as yet, anyway) been re-imposed. The reasoning is in part the assumption that museums are about education and civilisation – but more cynically that most of the visitors are more prosperous middle-class voters.

One of the most significant shifts to user charges is in the funding of higher education. Primary and secondary education continue to be viewed as a social benefit and are provided

11 *Ibid*., 9-11, 258; Blyth, *Austerity,* 56-62; C. Reinhart and K. Rogoff, 'Growth in a Time of Debt', NBER Working Paper 15639, Jan. 2010 at http://www.nber.org/papers/w15639.pdf; 'Why We Should Expect Low Growth amid Debt', *FT*, 28 Jan. 2010; 'Debt, Growth and Austerity', *New York Times*, 25 April 2013; J. Cassidy, 'The Reinhart-Rogoff Controversy: A Summing Up', *New Yorker*, 26 April 2013; A. Alesina and S. Ardagna, 'Large Changes in Fiscal Policy: Taxes versus Spending', in J Brown (ed.), *Tax Policy and the Economy*, vol. 24, Chicago: University of Chicago Press, 2010, also at http://www.nber.org/papers/w15438.

12 Chick, 'State, Public Finance and the Changing Response to Investing in the Future'.

13 On the triple lock, see government press release at https://www.gov.uk/government/news/pensioners-incomes-beat-inflation.

14 Personal knowledge as a former member of the University of Cambridge Building Committee; and currently a Commissioner of English Heritage. See http://historicenglang.org.uk/services-skills/our-planning-services/enhanced-advisory-services/ and http://planningguidance.communities.gov.uk/blog/guidance/before-submitting-an-application/planning-performance-agreements/.

free of charge, but tertiary education has been redefined as a private benefit leading to higher future earnings. The aim is to shift the funding of universities from the taxpayer to the 'customer' or student who pays a (current) maximum charge of £9,000 a year in tuition fees. This logic has been challenged, and both Labour and the Liberal Democrats have at times made commitments to reducing or even abolishing the fee. There are two different responses to the introduction of student fees. One is that higher education, in the same way as primary and secondary education, is a public good and should be free or with a low charge, as in most other European countries, and that students will graduate with high levels of debt that will create difficulty for many at a time when house prices are so high. The second response is that the charge is too low for wealthy families, and especially students at Oxford and Cambridge where the real cost of education is considerably higher than £9,000. The progressive logic might be to move to a higher charge at the full cost, reflecting future earnings from education in one of the elite universities, with grants to poorer students on the lines of Ivy League universities in the United States. But Conservative politicians realise the electoral consequences of such a move and are wary of about increases in the fee; and opponents of fees are reluctant to accept that higher fees for some would be more equitable and progressive, instead arguing that tertiary education is a social benefit that is vital to the success of Britain's economy.[15]

The methods of appraising government spending changed, moving away from the cost and prices of investment that had been incurred in the past (*ex post*) to the future cost and benefit of the project (*ex ante).* The change occurred in 1967, under a Labour government and well before Thatcher came to power. The emphasis shifted from earning a required rate of return on already existing assets to asking what the return would be if the asset were now built. Calculation of the return depended on future flows of income which had to be discounted in order to make a comparison with the present value of the costs and benefits. Such an exercise depended on the choice of discount rate, a figure that is not at all obvious as is clear in the current case of climate change.[16] It also depends on the assessment of benefits from spending on health or the prevention of road accidents. On an *ex post* basis, an individual's death meant that the value of future output was lost, but society did not need to pay for future consumption: the measurement was therefore lost output net of consumption. The *ex ante* approach measured the benefit of keeping someone alive through medical treatment or a safety measure on the roads; consumption was treated as a benefit to the individual (and hence to society) so that the measurement was now gross output. As a result of this change, the real value of preventing a fatality rose 37-fold between 1952 and 2004.

15 This topic was obviously much debated in universities: these comments reflect personal involvement at the University of Cambridge.

16 See the difference in discount rates in N. Stern, *The Economics of Climate Change: The Stern Review*, Cambridge: Cambridge University Press, 2007 which uses a discount rate of 1.4 per cent, placing a high value on the well-being of future generations, and W. D. Nordhaus, *Managing the Global Commons: The Economics of Climate Change,* Cambridge Mass and London: MIT Press, 1994 which uses a discount rate of 6 per cent, placing a low value on future generations. See the brief discussion by John Broome, 'The Ethics of Climate Change', *Scientific American*, June 2008.

Of course, the benefit varied depending on whose life was saved. Accidents to motor-cyclists and occupants of motor cars were predominantly younger and male with high future output; pedestrian deaths were more likely to be elderly. The economic value of the elderly was nil, for they had no future output; they were given a non-economic or subjective value. As a result of this approach, the cost-benefit of investing in motorways was higher than investing in pedestrian safety.[17]

This brings me to a fourth point: the changing emphasis on equality or incentives. After the war, the Attlee government assumed that equality created a sense of social cohesion that would lead to growth; Labour politicians could point to recovery from the depression as a result of increased consumption as a result of redistribution of income to poorer members of society. Equality was both ethically just in removing 'morally unjust' inequalities, and economically efficient in removing 'over-saving', class envy and social waste. The problem was how to reconcile equality with the control of inflation and the encouragement of a dynamic economy. One way of controlling inflation was through voluntary wage restraint which was complemented by dividend restraint; and Labour hoped to create a dynamic economy by taxing distributed profits at a higher rate than retained profits, in order to remove socially created wealth and to encourage internal investment by large, efficient firms rather than reliance on the stock exchange. This trade-off between wages and dividends was complemented by an absence of competition both domestically and from overseas, with a reliance on 'soft' export markets in the sterling area. The outcome has been termed a 'low effort bargain', for both labour and capital had little incentive to work harder and raise productivity given the controls on wages and dividends, and the weakness of competitive pressure.[18]

By the 1970s, much more emphasis was placed on incentives and the need for greater individual discretion in spending. In 1984, Nigel Lawson, the Chancellor of the Exchequer in the Thatcher government, pointed out that

> the Government's prime tax objective is to reduce the overall level of taxation. …Tax reductions will improve incentives to work, risk-taking and enterprise. They will contribute to the release of market forces, which will improve the "supply-side" of the economy, thus increasing output and generating more job opportunities. …[T]ax reductions should contribute to a more dynamic and adaptable economy, in which choices are more market determined and less influenced by the State….[19]

17 Chick, 'State, Public Finance and the Changing Response to Investing in the Future'.

18 N. Ellison, *Egalitarian Thought and Labour Politics: Retreating Visions*, London: Routledge, 1994; M. Francis, 'Labour Policies and Socialist Ideas: The Example of the Attlee Government, 1945-51', D.Phil. dissertation, Oxford, 1993'; S. N. Broadberry and N. R. F. Crafts, 'British Economic Policy and Industrial Performance in the Early Post-war Period', *Business History*, 38, 1996; H. Mercer, 'The Monopolies and Restrictive Practices Commission, 1949-56: A Study in Regulatory Failure', in G. Jones and M. W. Kirby (eds.), *Competitiveness and the State: Government and Business in Twentieth-Century Britain*, Manchester: Manchester University Press, 1991; A. Millward and G. Brennan, *Britain's Place in the World: A Historical Enquiry into Import Controls*, London: Routledge, 1996; Daunton, *Just Taxes*.

19 The National Archive, T470/201, Tax policy and the jobs exercise: summary. Memorandum by the Chancellor of the

In fact, the overall level of taxation was not cut: when Mrs Thatcher left power in 1990, total taxation was 35.5 per cent, still higher than in 1978, the last year of the Labour government.[20] The explanation was in part that the government benefitted from a windfall of revenue from North Sea oil and from the rapid growth of the financial service sector. What was achieved was a major change in the structure of taxation that was designed to release market forces and increase enterprise and dynamism. In the words of Geoffrey Howe in his first budget speech as Chancellor of the Exchequer in 1979, it was vital to reform the tax system 'that might have been designed to discourage innovation and punish success…. We need to strengthen incentives, by allowing people to keep more of what they earn, so that hard work, talent and ability are properly rewarded. We need to enlarge freedom of choice for the individual by reducing the role of the State. We need to reduce the burden of financing the public sector, so as to leave room for commerce and industry to flourish'.[21]

The task involved a shift from direct to indirect taxes, reducing the top marginal rate on earned income from 83 per cent 40 per cent, and the standard rate from 33 per cent to 25 per cent. The level of Value Added Tax was increased, from a two-tier rate of 8 and 12.5 per cent to a single rate of 17.5 per cent.[22] At the same time, the Thatcher government took steps to remove 'distortions' created by the tax system. As Lawson put it, it was important to have 'investment decisions based on future market assessments, not future tax assessments'.[23] It was also essential that individuals should have more direct engagement with capitalist enterprise, rather than placing their savings in life-insurance and pension funds that were considered to be risk-averse. The existence of distortions was widely accepted beyond the Conservative party, with the independent Institute for Fiscal Studies pointing to the 'fiscal privilege' in 1978/9-1982/3 of 132 per cent for life insurance and 56 per cent for pension contributions, compared with a tax liability of 60 per cent for direct shareholding and 81 per cent for a unit trust.[24] The need for change was explained to Mrs Thatcher: 'we should create the environment in which enterprise and wealth creation can flourish…. We should enlarge the role of the individual and diminish the role of the state. We want to encourage personal decision taking, personal responsibility and self-reliance. We want to reduce the role of Whitehall'. State intervention 'is nannying. It distorts economic decision taking. It erodes personal choice. It inhibits personal responsibility. State intervention in the form of tax reliefs is in many ways as unsatisfactory as state intervention in the form of public expenditure, nationalisation or state controls'.[25] The outcome was to reduce tax breaks on life insurance schemes in 1984, and to allow employees to have their own 'portable' pensions outside their employers' schemes, in the hope that it would create more labour

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Exchequer, 21 Nov. 1984.

20 OECD, *Revenue Statistics 2012*, Paris: OECD Publications, 2012, 97-8.

21 *Parliamentary Debates, Commons*, 5th ser., vol. 968, Commons, 12 June 1979, col. 240.

22 This discussion of taxation policy draws on M. Daunton, 'Creating a Dynamic Society: The Tax Reforms of the Thatcher Governments', in Buggeln, Daunton and Nutzenadel, *The Political Economy of Public Finance.*

23 *Parliamentary Debates, Commons*, 6th ser., vol. 56, 13 March 1984, cols. 295-6.

24 John Hills, *Savings and Fiscal Privilege,* IFS Report ser., 9, 1984.

25 TNA, T470/109, draft minute from the Chancellor to the Prime Minister, no date [1983].

mobility. At the same time, tax breaks were given to encourage individual share-ownership. The additional taxation of income from savings was removed in 1984, and in 1986 a tax break was introduced for Personal Equity Plans to encourage direct investment in United Kingdom shares. Lawson's ambition was 'to create a popular capitalism in which more and more men and women have a direct personal stake in British business and industry'.[26] The prudential commitment mechanisms of long-term savings in pensions and life-insurance with their high exit charges gave way to more short-term investments that could be accessed without penalty – a shift from 'civil servants' assets' or institutional savings to 'entrepreneurs' assets' with more individual control.[27] This change was complemented by a reduction in corporate taxation in order to increase the level of profitability from what was widely seen as a disastrously low level in the 1970s. Corporation tax was reduced to one of the lowest levels in the OECD, in an attempt to encourage enterprise and innovation.[28]

This list of changes in the relationship the state and market is not comprehensive, but does suggest that the British state has changed in fundamental ways, that bear comparison with earlier transformations in the second quarter of the nineteenth century or in the Edwardian period. Those earlier transformations have spawned impressive historiographies. What we now need to do is place the more recent changes in a longer perspective, moving beyond the deeply contested politics of the time. The Thatcher era is passing into history and we now have access to archives in order to appreciate the formation of policy. Nevertheless, a sense of historical distance is not easy, for current policies of 'austerity' can be seen as a continuation of the project of shrinking the state: the history of reshaping the state in the 1970s and 1980s remains politically salient today. Despite these dangers of political partisanship, historians should attempt to provide an analysis, as objectively as possible, of the underlying reasons for changes in the form of the British state. Let me now turn – in a preliminary and provisional way – to such an analysis. My aim can be no more than to provoke discussion.

III

Much of my academic career has been spent in understanding the increase in state investment and taxation in the later nineteenth and twentieth centuries: the municipalisation and nationalisation of urban utilities and operation of the Post Office; the emergence of council housing, especially after the First World War; the growth of state welfare at the expense of self-help and philanthropy; and the creation of a legitimate system of taxation. But since my academic career began in 1973, these trends have gone into reverse, so that I have been studying one process and living through another. One way of proceeding is to

26 *Parliamentary Debates, Commons*, 6th ser., vol. 94, 18 March 1986, cols. 177-8.

27 C. Munro, 'The Fiscal Politics of Savings and Share Ownership in Britain, 1970-80', *Historical Journal*, 55, 2012; J. A. Kay and M. A. King, *The British Tax System,* Oxford: Oxford University Press, 1978, 13.

28 *Parliamentary Debates, Commons*, 6th ser., vol. 56, 13 March 1984, cols. 297-8.

think about both processes by using the same frame of reference.

In my analysis of welfare policy, I have shown how existing institutional capacity shapes the outcome through a process of interplay with economic and social change and with political contingency. An example of this approach is the emergence of national insurance for health and unemployment in 1911 in response to the changing nature of social risks in industrial society, the actuarial crisis of the friendly societies that provided health insurance, the fiscal limits of the rate-funded new poor law, and the political imperative for the Liberals to offer alternatives to the Conservatives' imperial preference and Labour's right to work. Understanding the problems facing the government requires an analysis of the tensions within the existing pattern institutions for social provision; similarly, the solution was shaped by the capacity of the friendly societies and trade unions to provide administrative capacity and knowledge, and of the ability of the central state to raise tax revenues. But this attempt by the state to provide welfare through existing institutions run by their members - as distinct from a more centralised bureaucratic system – was subverted by the intrusion of commercial insurance companies that feared a loss of market share, and by a concern on the part of the Treasury that friendly societies run by their members might offer more generous benefits. Labour politicians shifted to support national, centralised provision in order to overcome these limitations; unlike their counterparts in Germany, they felt that the national fiscal regime was equitable, and that they could secure their demands through parliament.

The prior existence of trade unions and friendly societies resulted in a welfare system that was shaped by the assumptions of a male breadwinner, unlike the maternalistic welfare systems that emerged in the United States, reflecting the different pattern of institutions. In the United States, the corrupt and partisan civil war pensions created barriers to state involvement; and women's organisations were stronger than male trade unions or friendly societies, so leading to policies to support mothers and children. The structure of welfare provision then created more or less opportunity to adopt Keynes's policies in response to the depression. In Britain, social insurance predated the great depression and reduced the need for public works, unlike in the United States where the absence of welfare provision led to public works to relieve distress.[29]

This mode of analysis can be extended to apply to the more recent past. A good example is the remarkable shift in housing policy from the exceptionally high level of public housing in British cities after the First World War to the adoption of a 'right to buy' by the Thatcher governments. The initial emergence of mass council housing was a response to two phenomena. The housing boom at the end of the nineteenth century led to an oversupply of rental property and downward pressure on rents that was made worse by pressure on local government taxation that fell on house property. This cyclical downturn was then turned into

29 M. Daunton, 'Payment and Participation: Welfare and State Formation in Britain, 1900-51', *Past and Present*, 150, 1996; T. Skocpol, *Protecting Soldiers and Mothers: The Political Origins of Social Policy in the United states,* Cambridge Mass: Harvard University Press, 1992; M. Weir and T. Skocpol, 'State Structures and the Possibilities for "Keynesian" Responses to the Great Depression in Sweden, Britain and the United States', in P. Evans, D. Rueschemeyer and T. Skocpol (eds.), *Bringing the State Back in,* Cambridge: Cambridge University Press, 1985.

something more deep-seated by the impact of the war. The emergence of housing shortages in some parts of the country led to social tensions, particularly in Glasgow where the peculiarities of Scottish tenure had already led to problems before the war. A rent strike in Glasgow in 1915 threatened the war effort, and led to the imposition of rent and mortgage controls. After the war, it was not possible to remove the controls without provoking political upheaval, so the controls were retained until the shortages could be removed by building council houses, and a free market could be restored. The need for swift action meant reliance on the existing capacity of local authorities rather than other possible providers such as housing associations. But the cost of house building in the post-war boom proved excessive, the shortage was not removed, and rent controls continued. Council housing emerged as a contingent response to the erosion of profits in the private sector as a result of the structure of local government finance and tenure, compounded by the war-time crisis, and then became a normal part of housing provision that was accepted by both Labour and Conservatives, unlike in other countries where social housing was provided by a variety of institutions.[30]

The emergence of mass council housing, like social insurance in 1911, can be understood through the tensions within existing institutions and the adoption of solutions that reflected an interplay of available institutional capacity and political contingencies. The decision to sell council housing may be understood through a similar logic. In the interwar period, council house rents created political difficulties, for the cost of building varied by the level of subsidy, the standard of design, and the state of the economy. Hence post-war housing was very expensive as a result of inflation at the end of the war and the high design standards, but the subsidy was also high. Tenants, often in better jobs, paid a low rent. By contrast, poor tenants from slum-clearance schemes in the 1930s might pay a higher rent for poorer quality council houses. However, any attempt to cross-subsidy rents to assist the poorer families led to serious resistance from the 'respectable' tenants.[31] The politics of council house rents remained an issue after the Second World War and contributed to the decision to sell. The Treasury was concerned that the capital stock in council housing was not making an adequate return which became a serious consideration in the 1970s when public finances were under pressure. The political problem was that differentiation of rents according to the quality of property would cause outcry – and earning even a 3 per cent real rate of return would entail a 50 per cent increase in rents. Further, rents did not have an allocative function: their low level led to a poor utilisation of housing stock and discouraged labour mobility. These considerations led the Labour government to reconsider its housing policy in the mid-1970s, but it was taken much further by the Thatcher government with its deep commitment to owner-occupation as a route to creating wider ownership of property. Council housing was offered to sitting tenants at a generous discount often above 30 per cent

30 A. Offer, *Property and Politics, 1870-1914: Landownership, Law, Ideology and Urban Development in England,* Cambridge: Cambridge University Press, 1981; D. Englander, *Landlord and Tenant in Urban Britain, 1838-1918,* Oxford: Oxford University Press, 1983; M. Daunton, *House and Home in the Victorian City: Working-Class Housing, 1850-1914,* London: Edward Arnold, 1985.

31 M. Daunton (ed.), *Councillors and Tenants: Local Authority Housing in English Cities, 1919-1939,* Leicester: Leicester University Press, 1984.

– only privatisation with a progressive redistribution. Ideology and political calculation were important in the decision to sell – but so was the longer-term structural or institutional pattern of housing provision.[32]

The importance of contingent responses within particular institution structures can be extended to the wider pattern of nationalisation and subsequent privatisation. The shift from private to public ownership in the nineteenth century can be understood through joint-stock or stake-holder politics, that is an interplay of shareholders (dividends), bond-holders (interest), directors (fees), workers (wages), and customers (prices and quality of service or goods). The interplay between these different groups and the political choices they made could lead to public ownership. Although it was hoped that competition between both railway and gas companies would protect consumers, it soon became apparent that they were 'natural monopolies' which might exploit the public through their ability to impose a 'tax', much as the old monopolies of the East India Company. Consequently, the private acts permitting the operation of gas companies introduced clauses to control charges.[33] The Railway Regulation Act of 1844 gave the state the power after 21 years to cap the rates of any new line earning more than 10 per cent on its paid-up capital, or to nationalist any company making over 10 per cent profit. The power was not used, but tensions continued between the various stakeholders – not least as a result of the cost of land purchase when the lines were constructed which led to extensive borrowing and a high level of debt service. In 1873, a Railway Commission was established as a result of complaints by traders against what they saw as unfair rates, leading to the formulation of national rates in 1893. The companies opted to increase the rates immediately to the maximum permitted level, which led to a political backlash and much stricter control of freight rates in 1894: any increase in the rate above December 1892 needed to be justified by the companies. In effect, rates were pegged at a time of rising costs. The result was to erode profitability which had serious consequences for dividends, and led the companies to resist claims for higher wages. The situation was becoming unstable, with major strikes. The government's proposal to allow companies to merge to improve efficiency fell foul of Liberal commitment to free markets and Labour demands for nationalisation. Although the companies were amalgamated after the war, the situation did not improve and in 1937 the chairman of the London and North-East Railway accepted that shareholders would not oppose nationalisation on fair terms.[34]

The Tramways Act of 1870 gave local authorities power to purchase the systems at 'then

32 Chick, 'State, Public Finance and the Changing Response to Investing in the Future', xx; Florio, *Great Divestiture*, 276-7.

33 M. Daunton, 'The Material Politics of Natural Monopoly: Consuming Gas in Victorian Britain', in M. Daunton and M. Hilton (eds.), *The Politics of Consumption: Material Culture and Citizenship in Europe and America,* Oxford: Berg, 2001.

34 T. Alborn, *Conceiving Companies: Joint-Stock Politics in Victorian England,* London: Routledge, 1998; T. Leunig and N. Crafts, 'Did Early Utility Regulation Work? An Investigation of British Railway Regulation prior to the First World War', The Public Services Programme: Quality, Performance and Delivery, Discussion Paper 0804, at www.publicservices.ac.uk/wp-content/uploads/dp0804_leunig.pdf; G. W. Crompton, 'The Railway Companies and the Nationalisation Issue, 1920-50', in R. Millward and J. Singleton (eds.), *The Political Economy of Nationalisation in Britain, 1920-50*, Cambridge: Cambridge University Press, 1995.

value' after 21 years. Many municipalities did purchase the companies, in part as a means of securing revenue and in part because the prospect of municipalisation had removed the incentive for private companies to invest, and therefore needed public investment for the switch from horse to electric trams.[35] Similarly, municipalities were given power to take over electricity companies by the Electric Lighting Act of 1882 which allowed a local authority to sanction a private company in its area or to generate electricity itself, and to set a maximum price. Problems soon emerged, for many local authorities operated the gas undertaking and were reluctant to allow private electricity firms to compete; and local authority areas were too small to achieve economies of scale in electricity generation. In the United States, private firms operated over a larger area, and in Germany municipalities and private companies were willing to cooperate. In Britain, the impasse could only be broken by state intervention in the form of a Central Electricity Board in 1926 which purchased power from the various undertakings, and eventually direct ownership in the hands of the Central Electricity Generating Board in 1948.[36]

The emergence of public ownership can therefore be understood by analysing the politics of stakeholders within the context of regulatory systems that might not be appropriate for changing technologies. The interplay of these forces helped to undermine private ownership and the market, leading to a shift in the direction of state control and nationalisation. The same mode of analysis can help to explain the subsequent loss of confidence in state ownership.

The politics of stakeholders continued within the nationalised industries, in a way that would ultimately undermine acceptance of public ownership. The problem of the consumer interest continued, and arguably was no better, under public ownership. In the Victorian era, the regulation of the private gas industry, for example, provided some protection for different interests through a sliding scale so that an increase in dividends was only permitted on condition that the price of gas was reduced; conversely, the price of gas could only be increased if dividends fell. This system created a motivation for the companies to improve productivity in order to charge lower prices and pay higher dividends.[37] But it was not clear that public ownership had the same effect, for the consumer voice was muted. The government was less concerned with representation of the consumer than with supply-side initiatives. Although consumer councils were set up in the nationalised industries, they had little power for Labour ministers argued that the consumer was synonymous with the public and the electorate. In the words of one Labour politician in 1946, 'How can an organisation which is running an industry for the public interest exploit anyone?'[38]

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35 J. Mackay, *Tramways and Trolleys: The Rise of Urban Mass Transport in Europe*, Princeton: Princeton University Press, 1976. Generally, see J. Foreman-Peck and R. Millward, *Public and Private Ownership of British Industry, 1820-1914,* Oxford: Oxford University Press, 1994.

36 L. Hannah, 'Public Policy and the Advent of Large-scale Technology: The Case of Electricity Supply in the USA, Germany and Britain', in N. Horn and J. Kocka (eds.), *Law and the Formation of the Big Enterprise in the Nineteenth and Early Twentieth Centuries,* Göttingen: Vandenhoeck & Ruprecht, 1979.

37 Daunton, 'Material politics'.

38 C. Beauchamp, 'Getting *Your Money's Worth*: American Models for the Remaking of the Consumer Interest in Britain,

This approach to the consumer led to problems, for monolithic state monopolies seemed (and often were) unresponsive and inefficient. Decisions were shaped by other stakeholders, and the choices made were not necessarily the most efficient. The electricity industry provides a good example, above all in decisions over the choice of fuel for generating. The Central Electricity Generating Board had an obligation to purchase coal from the National Coal Board, for mining was politically sensitive; at other times, it was forced to develop nuclear power under the influence of the Atomic Energy Authority and dreams of technological modernity. Stakeholder politics continued in a new form, leading to a lack of consistency in decision-making and the intrusion of non-economic factors.[39]

The sale of nationalised utilities was a major element in the emergence of popular capitalism, accounting for a large part of the increase in individual share-ownership that was proclaimed by Lawson. But many of the shares were held only for a short time in order to make a speculative gain, and stake-holder politics continue within the privatised industries. As we have seen, Thames Water claims that financing of the new super sewer balances the interests of customers, investors and taxpayers – a doubtful claim given the increase in prices and high dividends achieved in part through the use of tax havens. A study of privatisation has found that it had less impact on productivity than predicted by its advocates, with more concern for good salaries for top managers, profits for shareholders, and influencing regulators. More striking than the emergence of popular capitalism has been an increase in the role of foreign owners, fund managers, pension funds and insurance companies with a redistribution to the wealthy. Many British consumers are supplied by EDF Energy – a company owned by the state-owned Electricite de France – over networks owned by the Cheung Kong Group of Li Ka Shing. By contrast, consumers have experienced regressive tariffs which benefit larger users.[40]

I have suggested that one way of considering the rise and fall of state-ownership is through the shifting nature of stakeholder politics, and the interplay between technology and regulatory systems. More generally, the fall in growth rates from around 1973 put pressure on the post-war deal between capital and labour that had allowed better wages, social protection, and secure employment. After the war, the social contract was based on workers trading lower current consumption for higher living standards in the future, based on the belief that industrialists would reinvest profits; commitment to the deal was underwritten by the government through tax breaks on condition that firms made investments and by providing more generous tax-funded welfare for the workers. The result was the 'low effort bargain' of wage restraint, dividend limitation, and low productivity. This trade-off was seriously threatened in the 1970s with a fall in growth rates and much stronger competition when Britain entered the European Economic Community. The intention was that

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1930s-1960s', in M. Bevir and F. Trentmann (eds.), *Critiques of Capital in Modern Britain and America: Transatlantic Exchanges 1800 to the Present Day,* Basingstoke: Palgrave Macmillan, 2002.

39 The electricity industry's choice of fuel is the subject of a doctoral thesis at the University of Cambridge by Tae-Hoon Kim, in progress.

40 Florio, *Great Divestiture*.

competition would make British industry more productive and efficient; in reality, many British industries were unable to compete with higher quality foreign goods. In the past, the absence of competition meant it was possible to combine reasonable wages and profits without rapid inflation; now, something had to give.

One victim was the rate of profit. In 1977, a report by the OECD found that gross profits in the corporate sector in the United Kingdom since 1970 were the lowest out of nine industrial countries, at less than half of the level in the US, France and Germany. Investment was low as a proportion of GNP, with less capital per worker than in many countries; investment in manufacturing was only 5.4 per cent of gross capital stock in 1960-68, compared with 9.4 per cent in Japan. The oil price shock after 1973 and rising costs of borrowing in the 1980s led to a drop in investment in manufacturing in most countries, but it was more serious in Britain than in most other advanced industrial countries, falling to 3.1 per cent of gross capital stock in 1980-88 compared with 5.8 per cent in Japan.[41]

The pressure on profits meant that the social contract between labour, capital and the state on which the boom rested was breaking down. The circle could be squared for a time because the demise of the Bretton Woods system of pegged exchange rates allowed laxer monetary policies to permit wages to grow ahead of productivity, with depreciation of the pound to ensure that goods remained competitive. The result could be a vicious circle of wage increases and depreciation which could be broken by re-pegging the pound in the European monetary system – a solution that could only work if the government was able and willing to impose wage discipline.[42]

By the 1970s, it seemed that the limit of the tax state had been reached. Government revenue rose from 9 per cent of GDP in 1900 to 23.4 per cent in 1939 and 37.6 per cent in 1945. The British tax system was unusual in its long-term trend from indirect to direct taxes from 1842, and I showed in *Trusting Leviathan* how tax consent was constructed in the nineteenth century, and maintained in the twentieth century. Unlike in most other European countries, the welfare system was funded from direct taxation rather than progressive benefits being funded from indirect taxation. But the limits of the distinctive British tax system were reached in the 1970s. One reason was a changing relationship between the franchise and taxation. In the nineteenth century, high levels of spending were constrained by a limited franchise. In the case of local government, there was a U-shaped relationship between spending and percentage of the adult male population with the vote: a narrower franchise dominated by the elite led to spending on urban infrastructure, which then declined with a widening of the franchise to the lower middle class, to a trough at about 60 per cent of the adult male population; it then recovered as the franchise was extended.[43]

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41 Andrew Glyn and Bob Sutcliffe, *British Capitalism, Workers and the Profits Squeeze*, Harmondsworth: Penguin Books, 1972, 66-8; OECD, *Towards Full Employment and Price Stability*; V. Bhaskar and A. Glyn, 'Investment and Profitability: The Evidence from the Advanced Capitalist Countries', in G. Epstein, and H. Gintis, (eds.) *Macroeconomic Policy after the Conservative Era***,** Cambridge: Cambridge University Press, 190-1.

42 M. Daunton, 'Britain and Globalisation since 1850, IV: The Creation of the Washington Consensus', *Transactions of the Royal Historical Society,* 6th ser., 19, 2009.

43 T. S. Aidt, M. Daunton and J. Dutta, 'The Retrenchment Hypothesis: An Example from the Extension of the Franchise

What about national taxation and the franchise? When the income tax was reintroduced in 1842, there was a close relationship between voting and paying income tax, which was designed to constrain spending. The extension of the franchise removed this constraint, and after the First World War, all adult men and some (later all) adult women had the vote. The crucial consideration here was the relationship with the threshold for paying income tax. Between 1945 and around 1970, most voters fell below the threshold to pay income tax, and they were likely to benefit from public spending for which they could vote without paying. Wages rose faster than tax thresholds so that more voters paid income tax and more were liable at a higher rate: the tax threshold for a married man dropped from two thirds of average earnings in 1950 to just over a third. Indeed, lower incomes they could experience a very high marginal rate in losing benefits and coming within the reach of direct taxes. The politics of direct taxation had changed: after the war, the median voter earned a modest income, falling below the threshold for income tax, which created strong electoral support for direct taxation; by the 1970s, the median voter paid income tax at a higher rate and support was reduced. [44]

Relationship between the incidence of taxes and the receipt of benefits. Although the costs of social benefits funded by direct taxes fell on middle-class voters, they initially felt that they had a reasonable deal, for they secured disproportionate benefits from greater access to medical benefits and secondary and higher education.[45] At a time of high employment, there was less concern that benefits were being used to support the 'undeserving' poor. The attitude of middle-class taxpayers were changing by the 1970s. The somewhat generalized pattern of welfare provision after the war seemed attractive at that time, but rising incomes and improvements in medical treatment created a demand for more individualized and specific provision. Greater disposable income and paying higher taxes for a basic level of provision seemed less attractive to a generation with different assumptions about consumer choice that emerged in the decades of affluence in the 1950s and 1960s.

The sense of fairness and legitimacy of taxation started to decline, linked with a major cultural change with the emergence of an ideology of 'choice' and market populism. In the United States, the change has been termed an 'age of fracture': a movement from national consensus, managed markets, and citizen obligation to a more fluid sense of gender and racial identities, narrower definitions of community responsibility, and a replacement of solidarity in terms of class or race by notions of fluid, multiple identities. Much the same process can be found in Britain. Keynesian macroeconomics were replaced by flexible, instantly acting markets, and by the individual interest of public choice theory. In the opinion of Daniel Rodgers, solidity and collective institutions gave way to a more individualized sense of human nature based on choice, agency, performance and desire. The notion of 'choice' was used more frequently, and became a natural claim on both the progressive left – for example, a woman's right to choose abortion - or the conservative right - the freedom to

in England and Wales', *Economic Journal*, 120, 2010.

44 Daunton, 'Creating a Dynamic Society'.

45 B. Abel Smith, 'Whose Welfare State?', in N. MacKenzie (ed.), *Conviction,* London: MacGibbon and Kee, 1958.

choose how to spend one's own money. Both used a rhetoric of choice, though for different ends. Avner Offer argues that affluence leads to a weakening of constraints, creating a hedonic treadmill of desire as we are satiated by each new pleasure and seek a new 'fix' – whether it be sexual gratification, food and drink, or immediate benefit from politicians. Victorian politicians assumed that the middle class were more prudent than the poor, and that as affluence increased so would prudential foresight. In fact, affluence had the opposite effect: time horizons have shrunk to the near future – the daily news round, the next election – so that it is difficult to think of the long term, and to deal with the sort of long-term policies needed to deal with climate change or the use of scarce, irreplaceable resources.[46]

One aspect of the change was a shift in the nature of political mobilization from the 1960s. The mass political parties that emerged in the nineteenth century were coalitions of different interests, making concessions to each other to construct a general platform for which members would campaign, even if they were not entirely happy about all the elements. This pattern weakened from the 1960s, with a greater mobilization on single issues rather than a common platform. Issues such as feminism and sexual politics, or the politics of consumption, suffer from what Geoff Eley has called the 'tyranny of structurelessness'.[47]

Another motivation for the change in attitudes towards the state was the need to come to terms with the major economic concerns of the 1970s – the falling rate of growth and profit, the ending of the stability of the Bretton Woods regime, and the appearance of stagflation. As Rodgers has said, 'the crisis that had launched the age was a breakdown in economic predictability and performance', with an acceptance on the left as much as the right of a need for new policies to fill a vacuum. Economists came up with different policies in response to these perceived failures, and politicians needed to devise a new rhetoric. Above all, they needed to sell a more optimistic future to a weary electorate in place what was seen as a zero-sum society in which the gain for one was a loss for another. The new ideas offered a more optimistic approach in which growth and prosperity were possible through 'populist market optimism' expressed in the rhetoric of Howe and Lawson: individual choice, free of the constraints of state control, which would lead to a dynamic, enterprising society. The approach was articulated in the United States by the Republicans, and much the same was done by the Conservatives in Britain. The 1970s seemed pessimistic, a period of decline, stagflation and scarcity – a zero-sum society in which it was difficult to find anyone on whom to pass the losses. Jude Wanniski argued that the Republican party 'should concentrate on tax-rate reduction. As they succeed in expanding incentives to produce, they will move the economy back to full employment and thereby reduce social pressures for public spending'. This would deal with the Santa Claus of the Democrats who was offering more generous welfare. The Republicans could not simply reject the Democrat plans and cut spending; the solution was to be a second Santa offering tax cuts that would increase revenue

46 Daniel T. Rodgers, *Age of Fracture,* Cambridge Mass: Belknap Press of Harvard University Press, 2011.

47 G. Eley, *Forging Democracy: The History of the Left in Europe, 1850-2000*, New York: Oxford University Press, 2002, 378; A. Offer, *The Challenge of Affluence: Self-Control and Well-Being in the United States and Britain since 1950,* Oxford: Oxford University Press, 2006.

and create growth. This 'populist market optimism' was a response to the pessimism of the 1970s, offering a promise of growth and prosperity.[48]

The new language of choice for consumers, the sense that taxation was a removal of individual freedom rather than an effective way of delivering a collective good, created problems as social spending (and in the United States for military spending) continued to rise. Santa seemed to be offering the electorate the opportunity both to have their cake (lower taxes) and to eat it (more welfare). The solution was debt, buying spending power from the future by borrowing, either through public debt or private debt in order to sustain the economic system through credit-based consumerism. Financial market liberalisation allowed an increase in private household debt in the United Kingdom from about 130 per cent of GDP in 1995 to 170 per cent in 2007. Wolfgang Streeck sees a move from a tax state to a debt state, followed by a further move to a consolidation state or austerity with a commitment to a balanced budget, debt repayment, and fiscal rules to bind the government.[49] Here is the 'bait and shift', moving the blame from the actions of the private sector to the state and sovereign debt.

The success of this strategy rests in part on the rhetoric used by Conservatives which connected with the notion of choice and individualism. It was also encouraged by changes in social structure brought about by the policies of the 1980s in a self-reinforcing feed-back loop. The breakdown of the Bretton Woods regime of fixed exchange rates arose in part from the reappearance of international capital flows, and the growth of the Eurodollar market in London marked the resurgence of the City. The changes made by the Conservatives at the time of 'big bang' and the encouragement of share ownership contributed to the rise of financial services, which were increasingly seen as reflecting Britain's comparative advantage. Deregulation and the globalization of finance in the 1980s contributed to growing inequality through the existence of substantial rents and the payment of high salaries, not only to their own executive but also to other companies as their performance was increasingly judged in terms of stock prices. By contrast, the deregulation of the labour market led to downward pressure on wages. These trends were reinforced by tax changes, for capital mobility led to cuts in taxation of capital which tended to equalise across countries at a lower rate than income taxation. Since the share of income from capital increases with wealth, the result was to reduce the average tax rate on the richest members of society, often below the rate of the middle class.[50]

This resurgence in inequality had political consequences. The rise of the financial sector, and the more general financialization of the economy, gave major players more political power to shape policies, as outlined in the London super-sewer and more generally in arguing that the most serious problem facing the country is the high level of public debt.

48 Lester Thurow, *The Zero-Sum Society: Distribution and the Possibilities for Economic Change,* New York: Basic Books, 1980; Jude Wanniski, 'Taxes and the Two Santa Theory', *National Observer*, 6 March 1976.

49 Wolfgang Streeck, *Buying Time: The Delayed Crisis of Democratic Capitalism*, London and New York: Verso, 2014.

50 Francois Bourguignon, *The Globalizattion of Inequality*, Princeton and London: Princeton University Press, 2015, 92-116.

Their success rests in part on their own economic power and the rhetoric of politicians aligned with them, but also in part on changes in the social structure as the power of organised labour declined and the power of the financial sector increased. Thomas Piketty suggests that we have moved from a society with a very small number of very wealthy *rentiers* found in the later nineteenth century to what he calls a 'patrimonial middle class' or *petits rentiers*. Although inequality is very high, this new form makes it more difficult to articulate, for 'it is a commonplace inequality opposing broad segments of the population rather than pitting a small elite against the rest of society'.[51]

IV

These are preliminary thoughts on a major change in the character of the British state, and one that is still in process. The reshaping of the British state since the 1970s is as radical as any earlier period, but is little understood in a longer-term historical perspective. Many historians grew up in the post-war welfare state, and have themselves been beneficiaries of the expansion of higher education and the public sector, and in their writings they have explained how the state increased in scale and reach. What they now need to do is explain why the state is seen as the problem and not the solution to society's problems. I have tried to show how the same modes of analysis used to explain the growth of the state might be utilised to explain its shrinking. It is an exercise that could usefully draw on comparisons with Japan, where sovereign debt is higher than in Britain, and private debt considerably lower. Understanding how both countries have responded to the crisis of the collapse of Bretton Woods and the recession of 2008 would be a highly productive subject for a future conference.

51 Thomas Piketty, *Capital in the Twenty-First Century*, Cambridge Mass: Belknap Press of Harvard University Press, 2014, 377, 420-1.

'Networks' in British History*

Joanna Innes**

Abstract. This article surveys ways in which historians of Britain have made use of the concept of the network in recent decades, with the object of introducing the topic to those who have little knowledge of it; assisting those who have written about networks to place themselves in a wider landscape, and encouraging reflection on how historians engage with new ideas and practices. The metaphor 'network' has been applied in increasingly diverse ways since the seventeenth century. During the twentieth century, it became a key concept in social theory, and the late twentieth and early twenty-first centuries have seen a proliferation of tools for visualising networks and developments in the mathematics of networks; these developments have been shaped by and also have helped to shape the development of the concept in ordinary language use. A survey of British historical writing shows that historians have sometimes drawn explicitly on sociological theorisation of networks: on social network theory (SNT); theories of social capital, or actor-network theory (ANT). However, such theories are often referred to in passing, or indeed not invoked at all; historians seem often simply to be relabelling with a fashionable word patterns of human interaction that have long interested them. Nonetheless, sometimes the concept is used in more adventurous ways. The article proceeds to identify historical subfields in which more and less use has been made of the concept during the current century. It has been heavily used by global and international historians; intellectual historians (especially historians of science) and economic historians. Historians interested in women and gender have also seen its potential to help them construct new perspectives on social functioning. The contrasting ways in which economic historians and historians of the British empire have used the concept, and the debates that have developed among them, are briefly characterised. The conclusion reflects on problems and opportunities associated with social network analysis, and suggests that there is scope for historians to work with mathematicians on method development – if an appropriate topic for enquiry is identified.

Historians of Britain have made increasing reference to 'networks' over recent decades, as the graph below illustrates. Derived from the *Bibliography of British and Irish History,* it shows the number of titles including variants on the word 'network' per thousand British and imperial history titles, for every decade since the 1950s. In the 1950s, there was only one such book or article title; by the 1990s, over 50; in the first decade of the present century, over 300. The graph shows that historians' propensity to use the term in their titles has significantly outstripped the overall increase in their propensity to publish.

* Thanks especially to Ruth Ahnert, Michael Drolet, Tim Hitchcock, Oren Margolis, Mark Philp and Mason Porter for their suggestions and guidance. Also to Stephen Baxter and Howard Hotson. *Sine qua non.*

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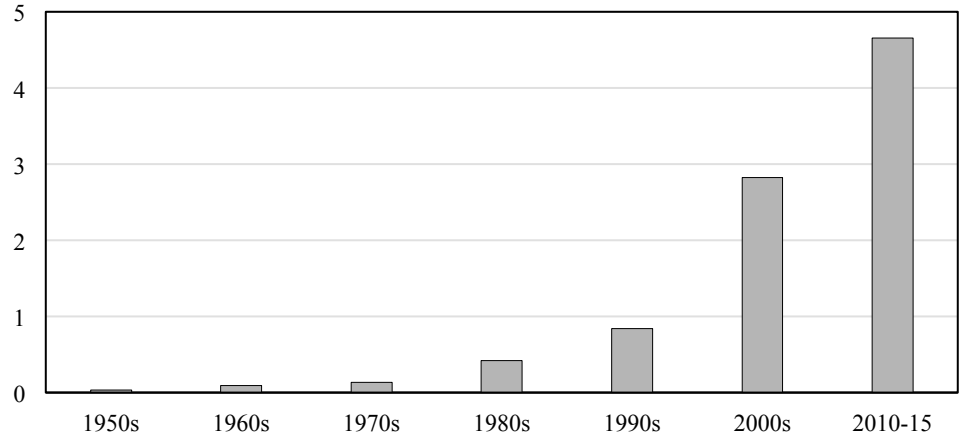

Figure 1: Titles including 'network' etc. per 1,000 titles.
Note: Number of every thousand titles in the on-line *Bibliography of British and Irish History*: which contain identified in a search for 'network*' as a title keyword. *BBIH* is produced by BREPOLS, in partnership with the Royal Historical Society and the Institute of Historical Research (http://royalhistsoc.org/ publications/bbih/).

Charting references to networks in titles of course provides only a crude indicator of historians' engagement with the concept, but it is suggestive.

Probably – among other ways of extending the enquiry – one should not confine one's attention to hard-copy publications only. There are no very powerful indicators for other forms of historical production, but several sites on the web showcase historians' network data: for example Harvard University's 'Visualizing Social Networks' site, which allows the user to generate visual representations of data gathered by various Harvard historians.[1] Particular historical research projects which focus on networks display their research-in-progress on their websites both verbally and visually: see, for example the site 'News Networks in Early-Modern Europe'.[2] The Oxford research project 'Cultures of Knowledge: Networking the Republic of Letters 1550-1750' promotes the pooling of scholarly information about correspondence and intellectual exchange in early modern Europe. Crunching or visualizing the resulting data is not high on this project's list of priorities, but its website gives access to presentations during which related data was visualised and analysed, and the strengths and weaknesses of available techniques were discussed.[3]

Historians' accelerating (though not uncritical) interest in networks no doubt partly reflects a wider cultural development, that is, the increasing currency of talk about networks and networking. That shift, in turn, has undoubtedly both shaped and been shaped by the

1 http://www.fas.harvard.edu/~histecon/visualizing.
2 http://newscom.english.qmul.ac.uk/.
3 http://www.culturesofknowledge.org, and its 'Resources' section. The 'Mapping the Republic of Letters' project in Stanford (http://republicofletters.stanford.edu) has been more committed to developing and using network tools, but by the same token less critically reflective about them. See also http://historicalnetworkresearch.org for a site aiming to provide 'a platform for scholars to present their work, enable collaboration and provide those new to network analysis some helpful first information'.

development across a variety of academic disciplines, both social-scientific and mathematico-scientific, of theories about networks and techniques and technologies of network analysis. Still, close attention to what historians of Britain and its empire have been doing with the concept suggests that, though some have engaged with these theories, techniques and technologies, few have done so more than superficially. Instead, with their usual idiosyncratic self-possession, historians have tended to deploy the concept not merely for their own purposes, but in their own ways. In so doing, they have developed some sub-disciplinary conversations about the role of networks in history.

This article offers a bird's eye view of these developments. It takes historians' use of the word 'network' as its starting point and surveys a range of associated behaviours, from simple re-description to close engagement with mathematicised modelling techniques. It aims to introduce readers who have taken no close interest in this body of work to some of what has been going on – so that they can decide whether they want to know more, and if so, provide them with aids. It aims also to help those who have engaged with networks in some fashion to position themselves within a wider pattern of activity. It is, thirdly, conceived as a investigative reflection on how historians change and develop their working practices.[4]

Network as Word and Concept in Society and the Academy

Dr Samuel Johnson, in his *Dictionary*, famously defined a network as 'Any thing reticulated or decussated, at equal distances' – a good example of a definition that a reader is unlikely to understand unless he or she is already familiar with what is being defined.[5] By the mid-eighteenth century, the word had two main applications. It applied to certain manufactured objects – such as fishing nets and matrices used in the making of lace – but also, more loosely and metaphorically, to organic systems: networks of veins or membranes.[6] In French – where the corresponding modern term, *réseau*, derives from an old French word for a little net – it was first used with reference to communication systems at the very start of the nineteenth century; subsequently, it became a keyword for

4 For a more purely conceptual approach, see Pierre Musso, *Critique des réseaux* (Paris, 2003) − thanks to Michael Drolet for drawing my attention to this book. For surveys conducted by historians based in other countries, not discussing local developments only, with a focus on formal methods, see Claire Lemercier, 'Analyse de réseaux et histoire', *Revue d'Histoire Moderne et Contemporaine*, 52 (2005), 88-112 and Marten Düring and Ulrich Eurmann, 'Historische Netzwerkforschung: Ein neuer Ansatz in den Geschichtswissenschaften', *Geschichte und Gesellschaft,* 39 (2013), 369-390. I have not consulted, but draw readers' attention to, 'Analisís de redes e historia: herramientas, aproximaciones, problemas', special issue of *Redes* (2011); 'Historike Netzwerkanalyzen', special issue of *Oesterreichischen Zeitschrift für Geschichteswissenschaften* (2011).

5 Samuel Johnson, *A Dictionary of the English Language* (London, 1755). A further phrase completes the best known version of the definition: 'with interstices between the intersections'. This was added in the 11th edition, 1799, after Johnson's death.

6 I have drawn on the *Oxford English Dictionary*'s account of changing use, supplemented with some browsing among texts in the Google Books corpus. The *OED* is clearly also an important but unacknowledged source for the account in David Hancock, 'The Trouble with Networks: Managing the Scots' Early-Modern Madeira Trade', *Business History Review*, 79 (2005), 470-2.

Saint-Simonians, thinkers who fused ideas drawn from engineering and the sciences with theories about society. They applied the word above all to systems of communication, which they hoped would have a great and beneficial social impact, but Michel Chevalier (who built on Saint Simon's thinking) began in the 1830s to write also of *réseaux* in a financial context.[7] In the case of British English, a Google ngram plot suggests that the noun came into increasing use from about 1840, around which time we first find it applied to railways.[8]

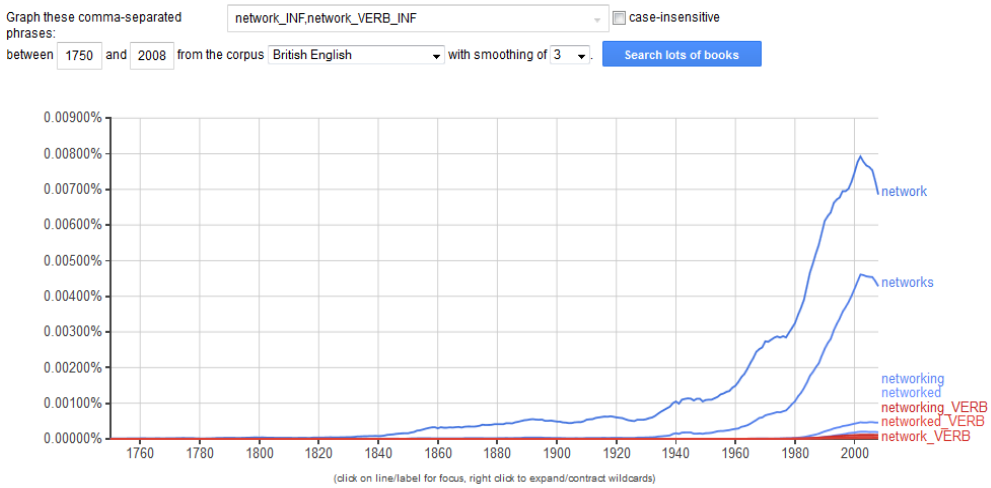

Figure 2: Google ngram plot, showing proportion of texts in Google database which include anywhere in the text variant forms of the word network; also more specifically the rise in use of verb forms of the word.

Though the move from conceptualising a 'communications network' to conceptualising a network of people in communication may seem a small one, it was apparently not taken, in Britain or France, until the later nineteenth century, and this metaphorical extension did not acquire much currency until the twentieth. Between the world wars, both sociologists and social anthropologists began to talk and think extensively about 'networks'. According to one train of thought, what is often termed 'society' (a concept which itself took recognisably modern shape only in the early nineteenth century) can be conceptualised as a network. Between the 1950s and 1970s, the sociologist Norbert Elias, concerned by what he thought was an unhelpful habit of conceiving of society as a conglomeration of atomistic 'individuals' suggested that we might better capture the way in which each helped to constitute the other by reconceptualising the whole as a 'network of interdependencies'; he called these second-level interdependencies, 'configurations' or 'figurations'. More influentially, these second-level formations have themselves been labelled 'social networks', and network tools developed to categorise them, and explore their relationship to other kinds of system or structure. A journal

7 Musso, *Critique des réseaux*, 205.
8 https://books.google.com/ngrams.

devoted to this form of study, *Social Networks*, was founded in 1978.[9] Society may, according to this way of thinking, be conceptualised as a 'network of networks'.[10]

Social-network analysis (sometimes termed SNA) does not (as we shall see) monopolise modern sociological thinking about networks – and is indeed not exactly a theory, but more a set of strategies. Practitioners tend to share a vocabulary and certain basic techniques and classic ideas (though not all terms in the lexicon are used in exactly the same way by all parties.)[11] Classic terms and ideas include

- the division of 'ties' linking actors (entailing recognition, acquaintance or some form of contact) between single and 'multiplex' (or multi-stranded);
- the notion that ties may be strong or weak. A 'strong tie' is one that links an actor to a group that is densely interlinked, a 'cluster', while by contrast a 'weak tie' is not reinforced by such interconnections;[12]
- the concept of the 'structural hole', that is, the point at which two groups each densely interrelated within itself is linked to another by a weak tie;
- and the idea of the 'small world', that is, that by ramifying outwards from an ordinary person's stock of contacts one can normally quite parsimoniously link to very large numbers of people.

Some of the earliest experiments in graphing social networks date from the 1930s.[13] Graphical models of networks can be given mathematical expression, and manipulated mathematically. The 1970s saw a flowering of interest in the mathematics of networks.

9 Linton C. Freeman, *The Development of Social Network Analysis: A Study in the Sociology of Science* (Vancouver, 2004). For Elias, see esp. his *What is Sociology?* (New York, 1978), 128-33. Thanks to Mason Porter for prompting me to think harder about the account supplied in this paragraph.

10 A term apparently first used by Paul Craven and Barry Wellman in 'The Network City', *Sociological Inquiry*, 43 (1973), 57-88.

11 Charles Kadushin, *Understanding Social Networks* (New York, 2012) introduces the ideas without getting too bogged down in the methods. More practical introductions include Stanley Wasserman and Katherine Faust, *Social Network Analysis: Methods and Applications* (Cambridge, 1994); Bonnie H. Erickson, 'Social Networks and History: A Review Essay', *Historical Methods*, 30 (1997), 149-157 pulls out points of possible interest to historians. The site of the International Society for Network Analysis provides a variety of resources: http://www.insna.org. See also Scott Weingart, 'Demystifying Networks' http://www.scottbot.net/HIAL/?p=6279 and Elijah Meeks and Maya Krishnan, 'Introduction to Network Analysis and Representation' http://dhs.stanford.edu/dh/networks. Historical applications are introduced by Marten Düring and Martin Stark, 'Historical Network Analysis,' in George A. Barnett ed., *Encyclopedia of Social Networks*, 2 vols. (London, 2011); Charles Wetherell, 'Historical Social Network Analysis', *International Review of Social History*, 121 (1998), 125-44; Roger V. Gould, 'Uses of Network Tools in Comparative Historical Research,' in James Mahoney and Dietrich Rueschemeyer eds., *Comparative Historical Analysis in the Social Sciences* (Cambridge, 2003). See also Roger Malina, Maximilian Schich and Isabel Meirelles eds., *Arts, Humanities, and Complex Networks* (2013) http//isabelmeirelles.com/arts-humanities-and-complex-networks-a-leonardo-e-book/. Mustafa Emirbayer and Jeff Goodwin, 'Network Analysis, Culture and the Problem of Agency', *American Journal of Sociology*, 99 (1994), 1411-1454 raises interesting issues about how the social-network approach can be reconciled with other forms of social theory.

12 This captures the way the 'weak tie' concept was first developed, though grappling with data about increasingly large and complex networks has revealed that it needs refinement.

13 J. L. Moreno, *Who Shall Survive? A New Approach to the Problem of Human Interrelations* (Washington DC, 1934; the 2nd edn., Beacon, NY, 1953, subtitled *Foundations of Sociometry, Group Psychotherapy and Sociodrama* is more widely available).

Developing the mathematical theory of networks – out of 'graph theory', through interaction with other bodies of mathematical work – interests mathematicians in its own right. But these techniques also have applications across the physical and biological, as well as the social sciences.[14]

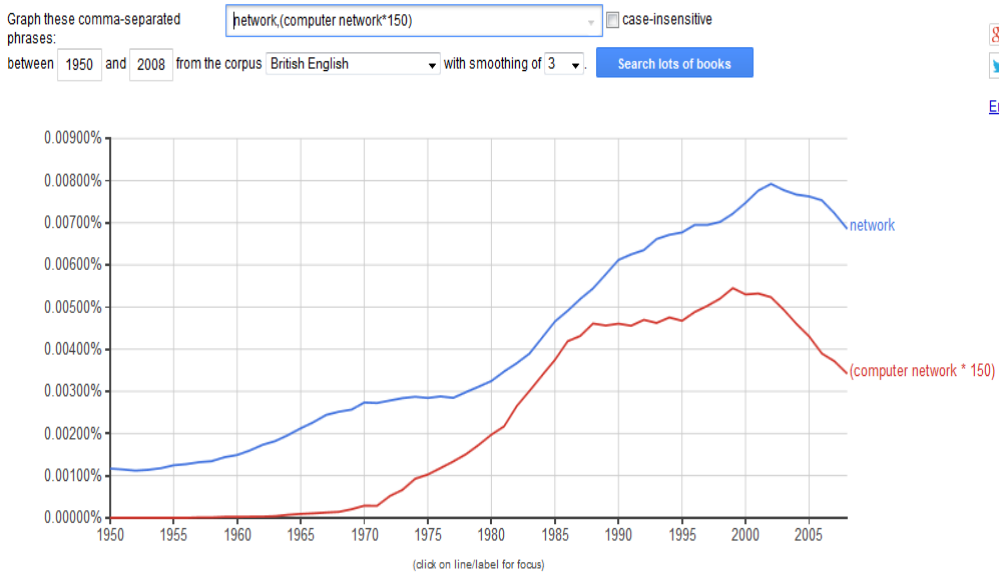

Figure 3: Google ngram plot, comparing proportions of texts including the words 'network' and 'computer network', the latter being multiplied 150 times so that the shape of the curves can be compared.

As the above ngram plot of usage in British-English publications stored in Google Books suggests, as academics developed their theories and honed their tools, the nouns 'network' and 'networks' were also coming into increasing use in ordinary-life contexts, aided by the growth of everyday self-consciousness and reflectiveness about social life, and the instrumentalisation of social practices in the business world. The 1980s saw the appearance of the verb 'to network' and the gerund 'networking'.

Recalling the way in which nineteenth-century developments in communications spurred both talk of 'networks' and interest in their implications for social functioning, late twentieth-century developments in information technology have both provided a new context for talk about 'networks' and also spurred the development of new ways of thinking about society. Suggestively (though no more), as the ngram plot below shows, references to 'network' in the 1980s tracked (though on an entirely different scale) references to

14 https://sites.google.com/a/binghamton.edu/netscied/teaching-learning/network-concepts for an attempt by the 'network science community' to answer the question 'What should every person living in the 21st century know about networks by the time they finish secondary education?' Mark E. J. Newman, *Networks: An Introduction* (Oxford, 2010) is an up-to-date text.

'computer network'. The fact that the term 'network' was already established in both communications and social contexts before its use in relation to computing began to soar must have helped cross-fertilisation at the level of concepts.

Academically, the impact of IT on the study of networks has been multifarious and complex. To instance only a few interactions: an understanding of the properties of networks is relevant to providers of information technology, both in terms of hardware and in terms of generating content. Machines operate with networks of information for their own purposes as well as ours; thus, enabling all but the most elementary searching requires that words be modelled as elements within verbal networks.[15] Information technology, secondly, facilitates the identification, representation and analysis of networks for users' own diverse purposes (as an indicator of development in this field: Wikipedia began publishing comparative analyses of social-network visualisation software in 2007).[16] Thirdly, empirical research on networks undertaken for other reasons has the potential to feed back to refine the operations of technology: thus, data on historical social networks can in principle be used to increase the power of search tools, by adding to the stock of information about what can usefully be linked to what (and it has been suggested that the generation of this data could be accelerated if only one could more effectively harness networks of researchers to this end….)[17] Fourthly, the networks created by information technology themselves provide objects for study. Of course they are of interest to IT providers, not least commercial providers, but also to, for example, sociologists, and indeed government bodies, interested in the role IT plays in galvanising social and political movements.[18]

Does the development of new forms of networking open up new hope for the future of society itself? There has been as much speculation about this as there was about the potential of 'association' in the nineteenth century. One among many who has played with this theme, Paul Mason, in his recent *Postcapitalism: A Guide to our Future* sets the power of networks 'as the fulcrum of his vision'; he sees networks as offering 'a brilliant tool for allowing us not just to dissent, but to secede and start our own alternative'. But not everyone is convinced that this will be the effect of new networking technologies.[19]

How Historians Have Engaged with Broader Academic Developments

Given that 'networks' have in recent years commanded increasing attention both from academics among other specialist practitioners, and the wider public, it is not surprising that

15 Network analysis of texts is also a scholarly field in its own right – as an on-line search will reveal.

16 https://en.wikipedia.org/wiki/Social_network_analysis_software, tab 'View History. For an overview' of tools currently available, http://dhresourcesforprojectbuilding.pbworks.com/w/page/69244319/Digital%20Humanities%20Tools. For examples of specialist projects, see e.g. Berkeley Prosopography Services; HistoGraph.

17 See the project http://socialarchive.iath.virginia.edu/, and PROSOP: http://www.prosop.org/.

18 E.g. Philip N. Howard, Aiden Duffy, Deen Freelon, Muzammil M Hussain, Will Mari and Marwa Maziad, 'Opening Closed Regimes: What Was the Role of Social Media During the Arab Spring?' (2011), http://dx.doi.org/10.2139/ssrn.2595096.

19 https://www.opendemocracy.net/uk/david-beer/masons-postcapitalism-are-networks-actually-part-of-problem.

historians of Britain (like historians of and in other countries) should have started to talk and think more about them.[20] Some have done so because they have engaged directly with developments in other disciplines. They have taken up concepts, methods and theories from disciplines in which 'network' more quickly became a term of art. Often, these concepts and methods have been those of social-network analysis. Historians have found various routes into that. Initially, the most common route seems to have been through social anthropology, but increasingly historians seem to encounter SNA in its own right, perhaps following through on their own curiosity by acquiring one of the various introductory texts available. Some historians have now so thoroughly internalised SNA concepts that they take them as given, employing them without explicitly invoking the specialist literature in which they are explained. SNA is not however the only body of social theory in which historians may encounter talk about networks. Other examples include the theory of 'social capital', which is a theory about the implications of networks but which historians may engage with without bringing the network element to the fore, also actor-network theory (ANT), which especially but not exclusively attracts historians of science.[21]

Until the 1970s, on those occasions when British historians put 'networks' in the title of their publications, they were usually talking about communications networks: road networks or rail networks. But from the 1970s, social networks increasingly provided a focus for enquiry, and in that same period we begin to find historians taking up tools and concepts from social theorists and trying them out, to see what they might do for them. Clearly my title-keyword method of identifying relevant works has its limits, but it is hard to find a really systematic method for surveying what has been done in historical writing more broadly. As well as reading across literature identified by title-keyword, I have conducted searches for references to certain influential social theorists in whose thinking networks play an important part.[22] The account which follows (not claimed to be anything more than a tentative sketch) is based on a reading of publications identified by these two methods, together with others identified by following through on footnotes.

Social anthropology, I suggest on this basis, was an important early source for historians who wanted to see what the concept of the network might do for them. One name which recurs is that of Jeremy Boissevain, a LSE-trained cultural anthropologist, whose work on Malta bore fruit in his 1974 book, *Friends of Friends: Networks, Manipulators and Coalitions*.[23] Boissevain was explicitly critical of then-dominant structural-functionalist approaches, which he thought assumed too orderly a society, and unhelpfully represented individuals as normally operating on the basis of given values and rules – consequently underplaying their self-interested creativity and missing the extent to which 'society' was the unstable product of their efforts. Boissevain's aim was to build an empirical account of how

20 See n. 4 above for surveys which say more about work in other countries.

21 Tommaso Venturini, Anders Munk, and Mathieu Jacomy, 'Actor-Network VS Network Analysis VS Digital Networks: Are We Talking About the Same Networks?', forthcoming in *Handbook of Digital STS*, currently available at http://www.tommasoventurini.it/wp/category/publications/.

22 I used keyword searching on History titles in JSTOR to do this.

23 (Oxford, 1974), esp. his Introduction.

society was constituted through the study of individuals' interactions. It is not obvious that the historians who were inspired by his work shared his frustration with structural-functionalism as such, but in an era when many operated according to a 'social history' agenda – seeking to find ways of understanding past 'societies' – they had reason to be excited by an approach which seemed to have the potential to let them move beyond conventional characterisations of past societies, their structures and values. Empirical research potentially gave them access to great stores of data about named individuals and aspects of their interrelationships; the challenge was to make this data speak.

This was a period in which historians were encouraged to learn from the social sciences – and medievalists and early modernists were particularly likely to look to anthropology. Alan Macfarlane, a Cambridge social anthropologist who wrote extensively about medieval and early modern English history, was one of the first to cite Boissevain in a historical context, in 1977.[24] The American scholar Judith Bennett cited Boissevain, and conducted some painstaking and systematic analysis of medieval property relationships, which drew on SNA analytical techniques, in an article of 1984.[25] Ten years later, the Cambridge historian of late-medieval English society, Christine Carpenter, followed up on the publication of her 1992 *Locality and Polity: A Study of Warwickshire Landed Society 1401-1499* by announcing in an article which cited both Boissevain and a then-current range of SNA texts that she hoped to launch a major study of social networks in late medieval England, probably taking a county as the unit of study.[26] Meanwhile, Shani d'Cruze completed an Essex PhD on 'The Middling Sort of People in Provincial England: Politics and Social Relations in Colchester 1730-1800', and was beginning to publish work arising from that, again invoking both Boissevain and standard SNA texts.[27]

The latest citation of Boissevain that I have found in a historical journal dates to 2001.[28] By contrast, references to the work of the sociologist Mark Granovetter (who was first cited in 1991) have become more frequent. (He was also cited by Carpenter). Granovetter is still publishing. His 1973 article, 'The Strength of Weak Ties', about the spread of information in social networks, is the most cited article in social science.[29] That historians now (sometimes) cite Granovetter demonstrates some awareness on their part of what is happening in the

24 Alan Macfarlane, 'History, Anthropology and the Study of Communities', *Social History*, 2 (1977), 637-8. Macfarlane identified John Barnes as the inventor of the term, as is customary; he credited Boissevain with having made '[p]erhaps the most serious attempt to undertake a full network analysis'.

25 Judith Bennett, 'The Tie that Binds: Peasant Marriages and Families in Late Medieval England,' *Journal of Interdisciplinary History*, 15 (1984), 111-129.

26 Christine Carpenter, 'Gentry and Community in Medieval England', *Journal of British Studies,* 33 (1994), 340-80.

27 (PhD thesis, Essex, 1990), since published as *A Pleasing Prospect: Society and Culture in Eighteenth-Century Colchester* (Hatfield, 2008). See also 'The Middling Sort in Eighteenth-Century Colchester: Independence, Social Relations and the Community Broker' in Jonathan Barry and Chris Brooks eds., *The Middling Sort of People: Society, Culture and Politics in England, 1550-1800* (Basingstoke, 1994). This was the publication in which I myself first encountered SNA.

28 Jessica Warner and Frank J. Ivis, 'Informers and their Social Networks in Eighteenth-Century London: A Comparison of Two Communities', *Social Science History,* 25 (2001), 563-87.

29 Mark Granovetter, 'The Strength of Weak Ties', *American Journal of Sociology,* 78 (1973), 1360-80. The first citation of this by a British historian that I have traced is Richard Davies, 'Lollardy and Locality', *Transactions of the Royal Historical Society*, 6th ser., 1 (1991), 194.

social sciences (though on the other hand, one does not have to try very hard to notice Granovetter – and it took historians a while to do that).

A problem with the way in which historians initially tried to use social-network theory – that is, to understand the structure of society – is that the research agenda was vast, and the research questions not always clear. We can use historical data to map social networks – at least, those networks that the data reveals to us, a potentially important limitation. But what can we do with the results? How are we to integrate our findings with what is asserted in other historical accounts, or what power can such enquiries give us to challenge, modify and replace other accounts? The temptation to crunch the data because we can needs to be resisted, unless there is good reason to suppose that the results will be commensurate to the effort. Christine Carpenter never implemented her great research programme, and perhaps advisedly not.[30]

More recent attempts by historians to use the tools and concepts of social-network analysis (and now sometimes also network-visualisation software) have been more limited in ambition. They normally entail studying some particular network, and exploring its functioning in a clearly delineated context. Examples include Lollard networks; networks among eighteenth-century London informers; networks in the Scots Madeira wine trade; Scottish migration networks; networks linking London apprentices and their masters, and networks among Protestant letter-writers in Marian England.[31] Though the topics studied are clearly diverse, among sub-disciplines, economic history is probably the field in which historians most often explicitly engage with network theory. This is intelligible, given that production for distant markets inevitably entails communication and transport, and the management of financial exchange: communications and finance have long been conceptualised in terms of 'networks', and adding human interactions as such to the list opens up scope for conceptual synergies. Economic historians as a group are also more than usually open to engaging with mathematicised social science.

In effect, the basic research question posed in all the studies just referred to is, How did the connections made by individuals in such-and-such a group affect their opportunities, individually and collectively? This agenda makes sense, both methodologically and historically: these are the kinds of questions that this body of theory is designed to address, and the insights yielded can easily be integrated into existing historical accounts (whether or not to revisionist effect). It however remains possible for relatively ambitious deployments of these approaches to prompt the objection that the 'networks' identified are arbitrary constructs, and their explanatory power not convincingly demonstrated. Recent debate in the

30 Bennett and d'Cruze undertook more closely focussed studies, but Web of Science's cited reference search does not show that either Bennett's article or d'Cruze's chapter has ever been cited in an academic journal – though searches in Google Books locate some books which cite them.

31 Davies, 'Lollardy'; Warner and Ivis, 'Informers'; Amanda Epperson, '"It would be my earnest desire that you all would come": Networks, the Migration Process and Highland Emigration', *Scottish Historical Review,* 88 (2009), 313-31; Ruth Ahnert and Sebastian E. Ahnert, 'Protestant Letter Networks in the Reign of Mary I: A Quantitative Approach', *English Literary History*, 82 (2015). See also for a recent book-length study Lindsay O'Neill, *The Opened Letter: Networking in the early-modern British World* (Philadelphia, 2015).

Economic History Review over the role of 'business networks' in explaining regional experience of industrialisation has revolved around this kind of critique. [32]

Historians have sometimes grazed up against network theory indirectly, through the concept of 'social capital'. This concept now commands wide recognition among historians, so is not always traced back to a specified theoretical source, but when it is, that is most likely to be either the work of the French sociologist Pierre Bourdieu, or that of the American sociologist Robert Putnam.[33] As it has been theorised, social capital is a function of networks: how much social capital one commands depends on how much, or just how one is networked. Cultural capital (a concept coined by Bourdieu) is not homologous. Cultural capital – skills or attributes which confer prestige – is likely to be acquired through social interaction (e.g. with parents or teachers) but is much more a function of the *character* of this interaction; it is conceptualised as then having important *effects* on the kinds of interactions one has with others. Though historians who write about social capital are at least implicitly thinking about networks, the 'capital' metaphor does not force them to bring this to consciousness. The late-medieval historian Marjorie McIntosh did think hard not just about social capital but about the networks that sustain it in her 1999 article, 'The Diversity of Social Capital in English Communities: 1300-1640 (with a glance at modern Nigeria)' – but the fact that she was contributing to a special issue of the *Journal of Interdisciplinary History* on the theme of 'Patterns of Social Capital: Stability and Change in Comparative Perspective' must have given her a special incentive to take theory seriously (she cites Putnam as her chief inspiration).[34]

Actor-network theory has a distinct lineage. It is most commonly associated among British historians with the work of the French philosopher/anthropologist/sociologist of science Bruno Latour.[35] The object of explanation in ANT is knowledge. The basic research question is, How do research communities generate something that is held to be knowledge? The most notorious or challenging feature of ANT is that it sets objects alongside humans as actors; knowledge is conceptualised as growing out of interactions between various humans and various objects, organised into historically specific arrays. Latour has a commanding position in the history of science, and his work is more frequently cited by historians, above all by historians of science, than that of any other social theorist so far mentioned – by a large margin. Others who have cited his work include historians of other kinds of knowledge (such as cookery) and historians of other kinds of network or community, such as participants in religious revivals, male prostitutes, and prisoners of war.[36] Natasha Glaisyer

32 R. Pearson and D Richardson, 'Business Networking in the Industrial Revolution', *Economic History Review,* 54 (2001), 657-79; critique by Wilson and Popp, and authors' response 56 (2003), 355-68. See also J.F. Wilson and Andrew Popp eds., *Industrial Clusters and Regional Business Networks in England 1750-1970* (Aldershot, 2003).

33 E.g. Pierre Bourdieu and Loïc J. D. Wacquant, *An Invitation to Reflexive Sociology* (Chicago, 1992) – an introduction to his work for English readers. Putnam's most influential book has been *Bowling Alone: The Collapse and Revival of American Community* (New York, 2000).

34 Marjorie McIntosh, ''The Diversity of Social Capital in English Communities: 1300-1640 (with a glance at modern Nigeria)', *Journal of Interdisciplinary History*, 29 (1993), 459-90.

35 E.g. Bruno Latour, *We Have Never Been Modern* (Cambridge, MA, 1993; orig. French 1991).

36 Caroline Lieffers, '"The Present Time is Eminently Scientific": The Science of Cookery in Nineteenth-Century Britain',

invokes Latour in the context of arguing that studies of trade and exchange should develop ways of embracing the history of the creation of related knowledge.[37] There is potential for melding SNA and ANT, but this is not often explicitly done, though it was by Lux and Cook, in a densely informed and ambitious study of 1998,: 'Closed Circles or Open Networks? Communicating at a Distance during the Scientific Revolution', identifying and exploring the activities of those who played the 'weak tie' role of linking clusters of the scientifically active.[38]

What Else Historians Have Done with Networks

Historians have thus engaged with some of the concepts, techniques and theories developed in kindred disciplines, and some may have started thinking hard about networks because they were stimulated by these bodies of work. But even when this work is cited, in practice it is often cited in passing; historians through citation demonstrate their interdisciplinary awareness, but have not obviously drawn much nourishment from the encounter. And in the great majority of cases, historians writing about 'networks', even those who place 'networks' in the titles of their publications, do not engage explicitly with these other bodies of work, nor indeed so much as hint (e.g. by their choice of terms) that they are aware that they exist.

If historians are increasingly writing about networks, but without explicitly engaging with network theories, why are they doing this? And how are they going about what they are doing?

To some extent historians are surely just picking up on wider shifts in usage – they are employing a word that has increasing currency in the world at large, not buying into any particular set of techniques or theories. The term 'network' exists within a larger semantic field which also includes terms like 'relationship', 'association', and 'system' – and indeed 'status group', 'kin group', 'patronage', 'circle', 'sociability', 'denomination', 'gift economy', 'credit', 'supply chain' and 'customer'. 'Contagion', 'electricity' and 'organism' were among terms used in the past as people struggled to conceptualise what we might now term network phenomena. Other terms that in the past were asked to do more work than now within this conceptual space include 'friend', 'correspondent' and 'connection'.[39]

As this list suggests, many ways that people thought in the past, including ways that

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Journal of Social History, 45 (2012), 936-59; Edward J. Gitre, 'The 1904-05 Welsh Revival: Modernization, Technologies, and Techniques of the Self', *Church History,* 73 (2004), 792-827; Katie Hindmarch Watson, 'Male Prostitution and the GPO', *Journal of British Studies*, 51 (2012), 594-617; Renaud Morieux, 'French Prisoners of War: Conflict of Honour and Social Inversions in England, 1744-1783', *Historical Journal,* 56 (2013), 55-88.

37 Natasha Glaisyer, 'Networking: Trade and Exchange in the Eighteenth-Century British Empire', *Historical Journal*, 47 (2004), 451-76.

38 David S. Lux and Harold J. Cook, 'Closed Circles or Open Networks? Communicating at a Distance during the Scientific Revolution', *History of Science*, 36 (1998), 179-211.

39 Hancock, 'Trouble with Networks', 472 for correspondent and connection. See also Linda Pollock, 'The Practice of Kindness in Early Modern Elite Society', *Past & Present*, 211 (2011), 121-158.

historians have thought in the past, can be re-described in terms of 'networks' without any new conceptual horizons necessarily being opened up in the process. In their 2011 exploration of how London apprentices came to be matched up with masters, Tim Leunig, Chris Minns and Patrick Wallis claim (plausibly enough) to be building on a hundred and fifty years of work into the relationships between 'social networks and economic development'.[40] Yet in much of the work they have in mind, the word 'network' never appears. Leunig, Minns and Wallis do invoke and make use of some of the categories of network theory. Arguably however, what they have studied are as much the attributes of master-apprentice pairs (like common occupational background) as 'ties' in a common-language sense of that term (attributes *can* within graph theory be treated as 'ties'; one can represent sharing an attribute with someone and being in contact with them in precisely the same way). The authors' invocation of networks sounds up-to-the-minute but risks confusing readers about what they have done, without adding much that is really conceptually distinctive.

As re-descriptors, 'networks' can readily find a home within many different scholarly ecologies. The graph below derives, once again, from a study of titles listed in BBIH, though it applies only to the past five years. It categorises publications with variants of 'network' in their titles according to a set of categories that I devised, on the basis of my impressions as to what themes recurred frequently enough to be worth signalling. (Publications whose content falls within more than one of the categories have been counted more than once). The graph suggests how wide is the range of topics that historians have recently conceptualised in terms of networks - though also how unevenly attention has been distributed. Habits of use and traditions of study make it particularly easy to find a place for this terminology in economic and business history; the history of infrastructure; religious history; the history of science; histories of the book and of literary production and consumption; and within Atlantic, imperial and global history.[41] One might have expected to find the term being taken up in some other contexts where – according to my impressions – one finds it less, though one can hypothesise reasons for these patterns. It seems to have gained less purchase in intellectual history than in the history of science specifically – though the lineage of ANT within the history of science, and power of other traditions of enquiry in other forms of intellectual history probably help to explain that. One might have expected find it being taken up more energetically in political history: there is plenty of work on networks by political scientists.[42] In this instance it is perhaps more a case of vocabularies in the political-history field being already well established – plus there is relatively little interaction in general between political

40 Tim Leunig, Chris Minns and Patrick Wallis, 'Networks in the Pre-Modern Economy: The Market for London Apprenticeships 1600-1749', *Journal of Economic History*, 71 (2011) 413-43 at 413.

41 For modern approaches to the history of infrastructure, Renate Mayntz and Thomas Parke Hughes eds., *The Development of Large Technical Systems* (Frankfurt-am-Main, 1988).

42 Though see Michael D. Ward, Katherine Stovel, and Audrey Sacks, 'Network Analysis and Political Science', *Annual Review of Political Science*, 14 (2011), 245-264 and Symposium on 'Political Networks', *Political Science & Politics*, 44 (2011), 39-84 for claims about the underdeveloped potential of network approaches for the discipline.

scientists and political historians.[43] The very fact that there is a well-established and theorised discourse about 'urban networks' (relationships between urban entities: cities and towns; a focus for theorising by geographers and urban sociologists, as well as by historians) may have discouraged application of the phrase to many other urban phenomena that could in principle equally have been studied under that heading.[44]

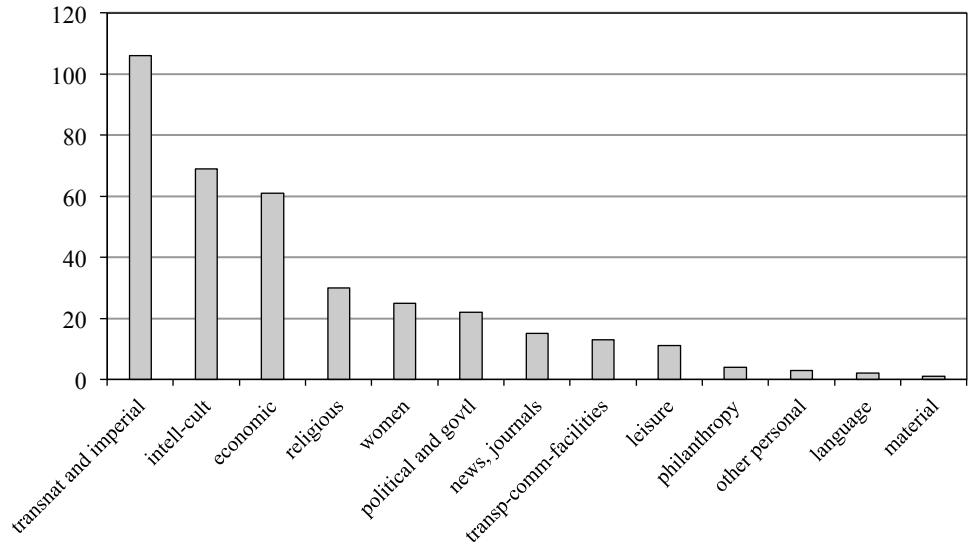

Figure 4: BBIH publications as in figure 1, relating to the last five years (2010-15) only, classified by field of enquiry, according to categories devised by me to capture patterns I discern.

The flexibility of 'network' as a category surely constitutes a large part of its appeal. It can be given application at all scales, from the global to the individual. It is in principle neutral as to the character of the relationship under study: political, economic, affective, whatever. Actors within networks can be categorised in terms of any attribute that the enquirer chooses to focus upon – gender, age, race, income, occupation, and so forth – and correlations between these attributes and their bearers' place within networks considered. The network concept can be asked to do explanatory work (Why are some people more effective than others at getting things done? Why did the scientific revolution take the form it did?), or to illuminate experience, or the shaping of identity. It is compatible with more than one philosophy of history: thus on the one hand, the positivist (networks can be conceptualised as 'structures', whose features can be empirically documented), or on the

43 Though see Thomas M. Wilson, 'From Patronage to Brokerage in the Local Politics of Eastern Ireland', *Ethnohistory*, 37 (1990), 158-87; Charles Tilly and Lesley J. Wood, 'Contentious Connections in Great Britain 1828-34', in Mario Diani and Doug McAdam eds., *Social Movements and Networks: Relational Approaches to Collective Action* (Oxford, 2003); Henning Hillmann, 'Mediation in Multiple Networks: Elite Mobilization before the English Civil War', *American Sociological Review*, 73 (2008), 426-54.

44 Sociologists have been interested in other forms of urban network: see n. 10 above for Craven and Wellman, 'Network City'. This article has rarely been cited by historians.

other hand the post-modernist (networks can be conceived as contingent artefacts, whose elements are defined relationally). In SNA, the units joined by networks are usually human (though in the case of 'affiliation networks', humans are represented as being linked immediately to organisations, and only indirectly to each other). But this is not true of ANT. And indeed, almost any system of relationships can be represented as a network – not only material objects and words but, for example, elements in narratives.[45]

I am not implying that the concept of the 'network' *cannot* be given distinctive content, or to claim that it has not done or lacks the potential to do distinctive historical work. On the contrary, particularities in the pattern of its appeal suggest something about the specific work that historians have seen it as fit to do. When Boissevain championed the concept of the network, he did so to serve a larger agenda; he thought that the study of networks, which actors constructed while also being constructed by them, would facilitate a change of perspective. As I have already suggested, the first historians who took up Boissevain's work equally had disciplinary agendas, if different ones. Probably – they do not say as much, but this would be plausible in context – they were trying to escape familiar descriptive schemes from the time or more recent times (e.g. ideas of social orders, or classes) and instead to find approaches that were driven by evidence that revealed how past societies did actually function. In retrospect, their efforts may be judged not to have been well directed, or at least not to have borne a great deal of fruit.[46] But one can see why the effort seemed worth making, and no doubt making it set in train a learning process.

Since then, historians' agendas have shifted. Some of those addressing these new agendas have been moved to think that 'networks' might have something to offer them. The concept looks immediately usable in global and transnational history, because it offers ways of mapping and talking about non-state interactions between people operating from different parts of the world. It offers means of placing individuals in a global frame. (I shall have more to say about what global historians have done with the concept shortly).

One does not have to refer to the work of Bruno Latour to see why networks have the potential to attract historians of knowledge. There are after all long traditions of studying intellectual correspondence, and, more diffusely, influence. The 'history of the book' has encouraged interest in book production, book collection and reading practices. There are intuitively good reasons for setting how people think in the context of what they are exposed to, and who is around (really or virtually) to challenge them. New databases and tools among other things potentially facilitate the study of citation networks (though historians have as yet done relatively little work in that vein).[47]

Actor-network theory has gained enough attention from historians for it now to be likely that its concepts and approaches will come to the attention of any given historian working on

45 Peter Bearman, James Moody and Robert Faris, 'Networks and History', *Complexity*, 8 (2002), 61-71.

46 For 'not much fruit', see n. 30.

47 D. R. White and H. Gilman McCann, 'Cites and Fights: Material Entailment Analysis of the Eighteenth-Century Chemical Revolution', in Barry Wellman and Steven Berkowitz eds., *Social Structures: A Network Approach* (Cambridge, 1988), 380-399.

another currently fashionable theme: 'material culture'. (The idea that objects have agency, and interact with human beings in historically-specific cultural systems is now also commonplace in the history of art.)

In a perhaps less predictable way, historians of gender have repeatedly judged (I think rightly), that 'networks' have much to offer them (note that, in my improvised scheme of categories for books and articles with 'network' in their title, items relating to 'women' score the fifth highest – after imperial and global, intellectual and cultural, economic and religious).[48] Network models cannot be constructed if one lacks information about individuals. But if one has appropriate information, network approaches by-pass assumptions about who has what kinds of tie with whom, and provide tools for mapping private in tandem with, or alongside, public relationships. They do not require one to generalise about 'women'. But they have the potential to illuminate how particular women operated at times when they were excluded from most formal positions of power, and to refine our ideas about the kinds of power they could possess – and on what basis they might possess it.

Because historians tend to start talking about networks, and theorising about them, when this serves their own investigative imperatives, if we want to understand patterns in the take-up of network terminology and conceptual engagement with 'networks' among historians, we need to think (among other things) about the internal dynamics of historical scholarship. Not many historians have moved beyond employing the word to engaging really seriously with the techniques and theories of social-network analysis (actor-network theory, as I have noted, has been somewhat more warmly received). Those who have engaged with SNA are so few in number that it would be hard to build much of a story about 'patterns' around them. But if we see them as – in many if not all cases – outliers within larger communities who use the word, and are trying to think about the concept, then it becomes easier to fit them into a bigger picture.

Though historians have shown little interest in developing more than a nodding acquaintance with social-network analysis, as practised by sociologists, and though take-up of actor-network theory is heavily concentrated within the history of science sub-discipline, this is not to say that historians have shied away from theorising about networks. But they have developed debates around themes which interest them. In some sub-disciplinary fields, they have begun to develop their own foci for debate.

Some of the questions about networks which interest economists, and sociologists of economic life, also resonate with economic historians. Networks can be conceptualised simply as a kind of human infrastructure, a base upon which market forces play out, themselves indeed adapting under pressure from those forces. But they may alternatively be conceived to exert some pressure of their own. To those who believe that there are forms of behaviour that are economically rational, social relationships may appear as potentially

48 E.g. chapters in Hilary Brown ed., *Readers, Writers, Salonnières: Female Networks in Europe 1700-1900* (Oxford, 2011) and Oliver Janz and Daniel Schönpflug eds., *Gender History in a Transnational Perspective: Networks, Biographies, Gender Orders* (New York, 2014).

warping influences, very probably distorting the operation of credit, commodity and labour markets. Mark Granovetter has engaged with this set of issues too, building on Karl Polanyi's notion of 'embeddedness': the idea that economic relations never take the forms outlined in formal economic theories, because they are always 'embedded' in specific sets of social relationships, which condition their operation.[49] Granovetter has tried to refine conceptualisations of what embeddedness means, and how (what we can schematise as) economic and social worlds interact. Economic historians can agree that this suggests worthwhile research questions: to wit, how social relationships (aka social networks) enable and encourage certain kinds of economic activity and constrain or discourage others – even while they disagree about whether social relationships should be accepted as constituting real economic life, or alternatively seen as having a warping effect. These are issues – part conceptual, part substantive, like so much academic debate – around which economic historians' work and arguments about networks have recently tended to revolve.[50]

In the field of global and imperial history, the pattern is different. Some global and imperial historians have embraced the term 'network', but others have questioned its utility. Critics have argued that we need a broader array of terms, so as to be able to distinguish different kinds of connection. Alan Lester has championed the term: his 2001 book, *Imperial Networks: Creating Identities in Nineteenth-Century South Africa and Britain* argues for the its utility as the concept in the context of a 'new imperial history', which affirms that interactions between human beings are not effectively captured by an analytical matrix which takes states and associated 'societies' as its basic units. Lester proposes instead to follow recent trends in geography in recognising the heterogeneity of spaces: people experience their immediate environment in different ways, and operate within a larger spatial architecture which is structured not just by physical distance, or communication systems, but also by the various ways in which they and others have connected, are connecting and might connect. Space is 'relational', and 'networks' which bridge space need to be understood dynamically, as 'processes not systems'. Identities were framed by these complex contingencies.[51] Simon Potter welcomes accounts of empire that stress that it was not simply 'radial', yet worries about the flattening effect of denominating all forms of human interconnection 'networks'.[52] The term 'network', he thinks, suggests equivalence between

49 Karl Polanyi, *The Great Transformation: The Political and Economic Origins of Our Time* (New York, 1944). Mark Granovetter, 'Economic Action and Social Structure: The Problem of Embeddedness' *American Journal of Sociology*, 91 (1985), 481-510.

50 There is a useful overview in Hancock, 'Troubles with Networks'. Examples of recent studies include, apart from those cited nn. 32, 39, 40 above, Francesca Carnevali, 'Crooks, Thieves and Receivers: Transaction Costs in Nineteenth-Century Industrial Birmingham', *Economic History Review*, 57 (2004), 533-50; E. Erikson and P. Bearman, 'Malfeasance and the Foundations for Global Trade: The Structure of English Trade in the East Indies, 1601–1833. *American Journal of Sociology*, 112 (2006), 195-230; Leanne Johns and Pierre van der Eng, 'Networks and Business Development: Convict Businesspeople in Australia 1817-24', *Business History*, 52 (2010), 812-33.

51 Alan Lester, *Imperial Networks: Creating Identities in Nineteenth-Century South Africa and Britain* (London, 2001); and also his 'Imperial Circuits and Networks: Geographies of the British Empire', *History Compass*, 4 (2006), 124-141.

52 Simon Potter, 'Webs, Networks, and Systems: Globalization and the Mass Media in the Nineteenth- and Twentieth-Century British Empire', *Journal of British Studies*, 4 (2007), 621-46.

actors. Perhaps in some contexts it would be more appropriate to think in terms of 'systems', dominated by a powerful few. Readers of the same newspaper, for example, may in a sense be networked by their common experience of reading, but the newspaper proprietor and his (or conceivably her) senior staff have disproportionate power to shape what they read. It cannot be said that there is a single 'debate' about networks within even just modern British imperial history (the field in which these authors work), yet it is also clear that there are some recurrent themes and common reference points, and that various historians are addressing themselves to these in an attempt to refine understanding. These debates are influenced by developments in the social sciences, notably in geography, but rarely if ever invoke social-network analysis.[53]

The picture which emerges is one in which historians, engaging to varying degrees (but – except in some subfields – mainly not very much) with developments in the social sciences, have seized upon 'network' terminology, developed a variety of conceptions of what a network is, have striven, with some if uneven success to find uses for the concepts they have developed, and in so doing developed a few, reasonably well-delineated sub-disciplinary discussions. Members of these various subfields are not, by and large, reading work in other historical subfields, so it is possible for terminology, concepts and methods to develop along various parallel courses. It is likely that there will be some cross-fertilisation, since global and imperial historians, economic historians, historians of science and gender historians (to instance only a few categories) are sometimes the same individuals, and the historiographies that they consult overlap. But inasmuch as they tap into different elements of the social sciences, such *interdisciplinary* exchanges as they may engage in are as likely to push historians in different sub-disciplines apart as they are to draw them together.

Challenges and Opportunities

It seems safe to predict that historians will (for some time yet) go on talking about networks and conceptualising things as networks, because the term has considerable currency in the wider culture, can denote many things that historians have long traditions of talking about, and offers potential to open up conversations with social scientists, as well as access to technical resources under development within IT, mathematics and the physical and biological sciences. Past experience suggests that the overall pattern of development will be ragged, there will be little explosions of debate about concepts and methods, many of these will never be resolved, although some learning process will take place, and after a while discussion will just move on – if we are lucky, leaving some residue in the form of

53 J. Griffiths, 'Were there Municipal Networks in the British World c. 1890-1939?', *Journal of Imperial and Commonwealth History*, 37 (2009), 575-97; Glen O'Hara, 'New Histories of British Imperial Communication and the 'Networked World' of the Nineteenth and Early Twentieth Centuries', *History Compass,* 8 (2010), 609-625. For geography, see Peter Haggett and Richard J. Chorley, *Network Analysis in Geography* (London, 1969), also Tim Vorley, Oli Mould and Richard Courtney, 'My Networking is Not Working! Conceptualizing the Latent and Dysfunctional Dimensions of the Network Paradigm', *Economic Geography*, 88 (2012), 77-96.

conceptual enrichment, method-development and a scattering of insights into particular subjects that have enduring value.

What problems have emerged so far; what hope is there of resolving them; and what look like the most promising avenues of opportunity? In these final remarks, I aim to focus chiefly on challenges and opportunities in relation to historians' interaction with SNA, social-network analysis – because otherwise the subject is impossibly large and diffuse. As I have stated, most historians talking about networks are *not* drawing directly and explicitly on SNA, and there are other relevant theories that they are if anything more likely to be drawing on. But SNA is a very well developed practice within the social sciences, and if we want to think about possible gains to be made from interacting also with IT, mathematics and hard sciences, then the larger field of network analysis within which SNA has come to nestle is surely where we need to look.

SNA is not historically conceived. A glance at the list of questions which a recent textbook account suggests that it has the power to illuminate is suggestive:[54]

- What is the relationship between basic personality constructs and social relations?
- How do groups form?
- What is the nature and source of leadership?
- How can we best describe the way social positions relate to one another?
- What is the nature of authority in organisations and society?
- What are the ways of constructing efficient organisations that benefit their stakeholders?
- How do new ideas spread and develop?
- What are the basic social resources of individuals and societies and how can they best be utilised?

What is immediately striking to me about this list is that aims are repeatedly phrased as if what is in question is the identification of universals, what might once have been termed 'social laws'. The drive is to abstract, to find the common properties of networks – and as we move from specifically social-network analysis into the larger field of network analysis, that applies all the more: the project in the wider field is to develop tools to facilitate the study of any set of entities (real or imaginary) that can be represented as networked. This does not sound like a historian's agenda. Historians are professionally committed to the study of particularities: to understanding what differentiates people, places, social collectivities, and experience at different points in time.

One appeal of SNA is that it is empirical, data-based: at its core it is a toolbox of methods for representing and analysing data; only secondarily is it a set of hypotheses about the properties of these datasets. But preparing data for analysis, for visualisation or mathematical manipulation, involves making a set of choices, and imposing or accepting simplifications.

54 Kadushin, *Understanding Social Networks*, 11-12.

First, how to delineate the network?[55] Networks can be bounded groups, whose membership can be established, or they can be intrinsically unbounded, generated by moving outwards from a core individual by some consistent process, until a decision is made to stop further iterations. Second, how to define the units in the network: individuals? families? Are staff in an organisation to be counted as members? If so, what staff? What are we going to treat as constituting a tie? 'Networks', by whatever method they may be delineated, do not necessarily have much substance in lived reality. No doubt we all 'belong' to organisations with which we have nothing much to do. It is not uncommon for historical datasets to come, as it were, ready formalised. Decisions have already been made by those who created the records about whom to include and whom not; information about subjects is already formulaic. But what are we to do when information about any specific individual is ambiguous, and does not neatly fit the categories that we have chosen to work with? What when there are obvious gaps in the data? There is always a danger, as we manipulate data, that we will lose sight of these complexities, and start mistaking our own artefact for a real entity. Tables and graphic network-visualisations have a compelling aura of factuality and scientificity, but we need to maintain our awareness of what they do not as well as what they do capture.[56] These problems are all the more pressing when it comes to huge datasets. One promise of new techniques is that they can help us to handle 'big data'. But crunching big data may reveal mega-patterns that are not readily intelligible in human terms.[57]

Anyone considering undertaking this form of analysis also needs to bear in mind that, for all but the smallest groups, and the simplest forms of analysis, these processes are time-consuming. Keying data (or, in the interests of accuracy, double-keying data) relating even to a few dozen or hundred individuals may take some weeks. Obviously in that context any researcher will want to be confident that the investment offers a decent hope of rewarding the effort. One needs to have thought through what one hopes to learn, and why a given dataset has the potential to yield worthwhile answers.

These caveats seem worth sounding because, although some SNA techniques have been around for some decades, as historians talk more than they ever have before about 'networks', the chances increase that more among their number will think about engaging with them. Moreover, the proliferation of network-visualisation software (the products of which historians are ever more likely to encounter in their reading and web-browsing), has its own power to stimulate interest. Yet, as a professional group, historians are still very

55 The 'boundary specification problem' is a well-known network issue. See discussion in e.g. Linton Freeman ed., *Research Methods in Social Network Analysis* (New Brunswick, NJ, 1992), ch. 3.

56 Lemercier, 'Analyse de réseaux', 90-2 airs some of these problems. See also critical remarks in the presentation by Nicole Coleman & Charles van den Heuvel, 'Visualizing Uncertainty and Complexity: Humanistic Methods for Mapping the Intellectual Geography of the Early Modern World', podcast at http://www.culturesofknowledge.org/?page_id=824.

57 For 'Big Data', see Shawn Graham, Ian Milligan and Scott Weingart, *The Historian's Macroscope: Big Digital History* (forthcoming) http://www.themacroscope.org. For an example of an attempt to present and analyse a large dataset, John and Sheryllynne Haggerty,'Visual Analytics for Large-scale Actor Networks, with an Application to Liverpool Business Networks', in Mark Casson and Nigar Hashimzade eds., *Large Databases in Economic History: Research Methods and Case Studies* (London, 2013).

much at an early-learning stage in terms of what these approaches can and cannot do for them. (Whether, as a profession, they will ever get beyond that stage remains to be seen).

Yet, though the caveats are worth sounding, there is no reason to erect a 'Keep Off' sign. None of the problems referred to are unique to this line of study. On the contrary, such issues constantly recur at the interface between history and the social sciences.

Problems with ambiguous and sparse data arise for many different kinds of historical analysis. There is nothing to be done but to maintain critical alertness, so as to be able to assess when a finding is seriously compromised by problems with the data. Similarly, it is always necessary to resist the temptation of the merely possible (above all, the possible but very time-consuming). We need constantly to reflect on whether the questions we are asking can plausibly answered by the means we are using – and just how answers to our questions will add to knowledge and understanding.[58]

Similarly, historians cannot eschew all abstraction and generalisation. We employ abstractions whenever we form sentences. Historians by and large tend to prefer informal and unsystematised everyday-life ways of making sense of things to highly formalised schematisations, but their interpretative strategies are nonetheless constantly refreshed by their adoption of concepts and ideas borrowed from academic and other specialist discursive contexts – as are modes of understanding in the wider culture. Indeed, the pattern of development discussed in the first section of this essay – in which changing ordinary-language applications of a term interact (by means that are admittedly difficult to specify) with changes in social scientists' use and practice, with historians drawing more on the first, but to some extent on both – provides a classic illustration of a common process.

Historians do not have as their goal the establishment of universal social laws. But in fact social scientists too are also mostly concerned to understand the workings of particular networks. The concepts and categories they develop are designed in important part to help them do that. Historians – exerting as they always do pressure to cope with particularities – might hope to contribute to a dialogue about how modelling can be refined, and how taxonomies can be further developed.

Modelling sets of relationships as networks, including experimenting with different ways of modelling the same set of relationships as a network, might prove illuminating for a historian because of what it does not as well as what it does capture. Taking categories employed at some past time as a starting point, historians may find that modelling as networks sets of relationships that contemporaries saw as different helps to illuminate what was and what was not distinctive about them. Similarly in relation to power and status: we might learn from seeing what aspects of power and status are but also *are not* captured by various ways of modelling networks; the exercise might set us thinking in new ways about different forms of power and status. Armed with social scientists' hypotheses about the functioning of networks, historians may find that they have usefully enhanced their stock of explanations for particular phenomena that interest them. Or the very fact that a network

58 http://www.themacroscope.org/?page_id=449 'When not to use networks'.

does not function as predicted may suggest that as-yet-unmodelled elements need to be incorporated into the account.

Some things that historians might find wanting in terms of analytical tools now available may align fruitfully with mathematicians' interest in improving these tools.[59] Mathematicians would like to develop better tools for coping with multiplexity (multi-stranded relationships); clustering (the presence of densely-interrelated subgroups within a larger network); multi-partite structures (involving relationships between three or more different kinds of entity), for the creation of taxonomies, and for study of the dynamic properties of networks: that is, the ways in which they change over time, either for endogenous or exogenous reasons. These are all forms of development from which historians might profit.

Prudence – and experience – suggest that historians will risk least and gain most by keeping the studies that they undertake small and nimble. The trend of study – towards the study of small, clearly specified groups, in order to add to understanding of those groups, with reference to themes and issues already extant in the historiography, and capable of being illuminated also by other sources – may have something to do with larger trends in historical study, but may also reflect a successful learning process. Yet this is not to imply that attention to networks will never yield anything but exemplification and detail. Focussed studies which change ways of seeing may in time have very large effects.

Returning to the very start of my paper, 'network' is a metaphor, derived from material objects, that we have come to use to conceptualise some of the ways in which human beings relate to other human beings, or indeed (as in actor-network theory) objects. There is nothing wrong with metaphors: sophisticated human thought is a tissue of metaphors, though certainly we need to be wary about what we lose by substituting representations for what we aim to represent. But it is not a fault of any given way of representing the world that it does not capture all features of the world. If it did, the representation would be like Jorge Luis Borges' paradoxical map: it would be as large and detailed as the territory that it represented.[60] We should ask of representations only that they help us to understand the world.

59 Mason Porter et al., 'Communities in Networks', *Notices of the American Mathematical Society*, 56 (2009), 1082-97, 1164-6; Gourab Ghoshal et al., 'Random Hypergraphs and their Applications', *Physics and Society*, 79 (2009), article no. 066118; Jukka-Pekka Onnela et al., 'Taxonomies of Networks from Community Structure', *Physical Review*, 86 (2012), article no. 036104; Mikko Kivela et al., 'Multilayer Networks', *Journal of Complex Networks*, 2 (2014), 203-71. Thanks to Mason Porter for discussion his perceptions of the field with me.

60 Jorge Luis Borges, 'On Exactitude in Science'. He was developing a joke of Lewis Carroll's. For the publication history, see https://en.wikipedia.org/wiki/On_Exactitude_in_Science.

History and Continuity in English Education Since 1800

Lawrence Goldman*

Abstract. This paper argues that British educational history and policy over the past two centuries is essentially circular rather than linear. Unlike other aspects of British social development, the history of education (and especially the history of secondary education for children between the ages of 11 and 18) has consistently returned to educational practices of the past. It is contended that over the past 40 years, both major political parties have pursued the same educational goals by employing the same educational mechanisms; and that these policies and methods are reminiscent of earlier, Victorian approaches to mass education. The paper also argues that in taking this long view of education we can better appreciate three distinct periods of English social administration: a first phase down to 1870 when the state co-operated with voluntary agencies; a second phase, lasting for a century, in which central and local state structures were in partnership; and a third phase since 1979 during which the centre has once again sought the assistance of civil society groups outside government and downgraded the role of local political authorities. It is suggested that this pattern is representative of other areas of British social administration since 1800.

The provision of education in England differs in at least two fundamental respects from the provision of other social and welfare services. Firstly, there is a fundamental absence of consensus over the structure and aims of the education system. Secondly, the history of education is non-linear: by that I mean that we are continually returning to problems and solutions from the past, though inevitably these take slightly different forms as contexts alter.

Other developed, western nations have either reached broad agreement on their educational structures in the period since the Second World War, such as the Germans; or they have found ways of solving disagreement through the political system, such as the Americans. States in America have control over the educational structure and curriculum to be applied within their jurisdiction; local school boards are elected in each municipality. Contestation over education is intrinsic at all levels in the United States, for sure, but is decided directly through the ballot box. In Britain there is neither consensus nor effective forms of local and intermediate democracy through which issues can be determined, whether for good or ill.

Meanwhile, education in Britain has not followed the pattern of other social and health services. The National Health Service, despite its flaws, commands remarkable and indeed growing respect and affection: the latest findings from the British Social Attitude survey published in early 2015 suggest that satisfaction with the NHS, now at 65%, is rising, and that dissatisfaction, at 15%, is at an all-time low.[1] We may argue about costs and the

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1 http://www.england.nhs.uk/2015/01/29/nhs-satisfaction-levels-rise/.

marketization of some services within the NHS, but structures ensuring free public health care at the point of need, paid for out of general taxation, are politically untouchable: the consensus holds. Meanwhile the history of health care is intrinsically linear in the sense that developments in medical understanding, technology, and care at individual and societal levels have had a transformative effect on human life and potential, and this can be measured in any of dozens of ways. There can be no contestation over, for example, rising life expectancy in the past hundred years or rising cancer survival rates over the past 30 years. There is little that modern medicine and its delivery can learn from the past, and no need to return to previous controversies, whether scientific or institutional. Our capacity to ease and prolong human life has increased and is increasing.

This linearity, as I shall call it, encourages a type of whig history. The history of social welfare and social reform in Britain was first written systematically in the 1950s and 1960s and was strongly influenced by the legitimate pride that historians and most other people then felt for the new institutions of the post-war welfare state.[2] A historiography that might be characterised as telling a story of ascent from darkness to light emerged, delving back into the Victorian roots of our social and medical services, and always contrasting the benighted beliefs and practices of our forebears with the present enlightenment. The New Poor Law of 1834, miasmatic theories of disease, the exploitation of women and children in mines and factories, the Revised Code in elementary education – all these were fair game in an essentially whiggish narrative which was designed to show how our modern services emerged. And if the model for this kind of history was that of the development of medicine and health care, a whig history was neither surprising nor wholly inaccurate for reasons already mentioned: things really have got better over time. But it is the argument of this essay that the history of education is different: it shows us that we are fated – or perhaps I mean doomed – always to return to previous practices and controversies in a history that shows a remarkable degree of continuity and also circularity over the past two centuries. Medical knowledge and technology continue to develop but ideas about the purposes of education and the best ways in which these can be achieved are as old as the ancients, quite literally.

The great weakness of whig history is that, whether explicitly or implicitly, it starts from the present situation – the mental or material world inhabited by the historian - and sets out to show the pathways taken by events and historical actors on the long march to this present situation.[3] But in a continuous historiography, one marked by circularity and return rather than linearity and development, it is required that we begin with the present, for the purpose of the exercise is to show similarities with, rather than differences from the past.

Where does the history of the present in British education begin? In my view, in Oxford, at Ruskin College on 18 October 1976 where the then prime minister, Jim Callaghan, gave a famous speech questioning three decades of supposed educational progress since the Second

2 Lawrence Goldman, *Science, Reform, and Politics in Nineteenth Century Britain: The Social Science Association 1857-1886* (Cambridge, 2002), 20-1.

3 Herbert Butterfield, *The Whig Interpretation of History* (London, 1931).

World War.[4] The timing of the speech is crucial to the argument because that was the same month that the International Monetary Fund was called in by the Labour government he led to provide immediate emergency liquidity for an economy that was buckling under 'stagflation' – low growth, low productivity, strikes and labour unrest, and very high inflation running close to 20% annually. October 1976 is the turning point in post-war British history, the moment when, as Callaghan himself was reported as having told the Labour Party at its annual conference of that season, 'the party's over'.[5] Expenditure cuts followed over the next three years, paving the way for the Conservative election victory of 1979 and the political economy of Thatcherism which has set the parameters and terms of British politics ever since. That a Labour government called for a fundamental review of educational aims and practices at exactly the moment that it also recognised the limits of state spending and was forced to set a new course, links the history of education to the wider history of everything else in Britain over the past 40 years. The key political battles over the respective roles of the state and markets, the level of public expenditure, the power of local government, and the pursuit of social equality have been played out as much in educational policy as in other areas of national life.

Jim Callaghan had never been to university, though he did attend Workers' Educational Association classes as a young man and retained a special affection and respect for adult education.[6] He was concerned – angry might be a better word – that ordinary children were not receiving an education that fitted them for adulthood and the world of work. They were being palmed-off with a sub-standard education that he blamed on progressive ideas in teaching and low-grade administration by local educational authorities which enjoyed considerable powers in the decentralised educational system established by the 1944 (Butler) Education Act. The speech was based on a study Callaghan had commissioned some months earlier from the Department of Education and Science and known as the 'Yellow Book' which was critical of the autonomy enjoyed, and often misused, by teachers. They were sacrificing educational standards and rigorous learning in favour of more modish and egalitarian practices in the classroom where whole class teaching, setting and streaming were being abandoned and the central importance of literacy and numeracy was frequently forgotten.[7] This, as Callaghan, could see, was of no value to the working-class child who probably started out with disadvantages and needed skills and attainments to prosper. As the Yellow Book opined, 'the time has probably come to try and establish generally accepted principles for the composition of the secondary curriculum for all pupils, that is to say a

4 http://www.educationengland.org.uk/documents/speeches/1976ruskin.html.

5 The phrase was used widely by the press at that time. What Callaghan actually said was: 'We used to think that you could spend your way out of a recession and increase employment by cutting taxes and boosting government spending. I tell you in all candour that that option no longer exists, and in so far as it ever did exist, it only worked on each occasion since the war by injecting a bigger dose of inflation into the economy, followed by a higher level of unemployment as the next step.' *Labour Party Annual Conference Report 1976*, 188.

6 K. O. Morgan, *Callaghan: A Life* (London, 1997).

7 Ken Jones, *Education in Britain: 1944 to the Present* (Cambridge, 2003), 73-4, 94-5.

"core curriculum."'[8] The future of educational reform was here prefigured: it was to involve the reintroduction of traditional teaching methods, the reduction of professional autonomy, the imposition of national curricula and standards, and the simultaneous centralisation and also devolution of educational administration. To some extent this echoed the slightly earlier critique of modern education set forth in the five volumes of the so-called *Black Papers*, edited by two university lecturers in English, Brian Cox and Tony Dyson, and published between 1969 and 1977.[9] These essays were largely written by educational and political conservatives who openly questioned the pursuit of social equality through education and the control then exercised by left-wing ideologues, as they saw them, over educational policy and the teaching professions. The critique was all the more sensational and effective when it came from a stalwart of the Labour movement like Callaghan: indeed, it may be said to have opened up a culture war within Labour that continues to this day between traditionalists and progressives. But in that culture war, New Labour under Tony Blair largely made common cause with the Old Labour of Callaghan and, indeed, with the Thatcherites, against educational progressives.

It is a curiosity of our recent politics that the two main parties have maintained a rhetorical hostility to each other over education even when they have very largely agreed. Surely the most notable feature of educational history since 1976 is the continuity between the parties in power. Hence the Thatcher governments of the 1980s largely acted upon Callaghan's criticisms of the late 'seventies. Teaching unions were faced down or ignored; the Local Education Authorities were bypassed and their responsibilities reduced. More authority was given to head teachers and school governors who, under the 1988 Education Reform Act's principle of 'local management of schools' became jointly responsible for the school's budget and hence for a range of its key functions. Parents were also empowered and could vote to take a school out of LEA control to make it 'grant maintained', receiving funding directly from central government. This was itself part of a wider strategy to bring greater diversity to secondary schooling in particular: alongside 'grant maintained schools' were new City Technology Colleges, beacons of educational intensity and high standards that would, it was hoped, through their achievements and popularity with parents, drive up standards in neighbouring schools. For some Conservatives no doubt, the attraction of these new types of school was that they might evolve, in some gradual and unspecified way, into the old academic and selective grammar schools of yore. Centralisation was also established for the curriculum under the 1988 legislation: for the first time, England and Wales had a national curriculum in primary and secondary schools, established by government-appointed committees and approved by the Secretary of State, which was designed to ensure that all pupils could study 'the same good and relevant curriculum … regardless of sex, ethnic origin

8 Department of Education and Science, *School Education in England. Problems and Initiatives* (London, DES, 1976), 11.

9 'Cox, (Charles) Brian (1928-2008), Poet, Literary Critic, and Educationist', *Oxford Dictionary of National Biography*, http://www.oxforddnb.com/view/article/99827; 'Dyson, Anthony Edward [Tony] (1928-2002), Literary Critic and Campaigner for Homosexual Law Reform', *ODNB*, http://www.oxforddnb.com/view/article/77161.

and geographical location'.[10]

The achievements of these Conservative policies in statistical terms should not be overlooked: by 1997, as compared with 1979, far more under-5s were in state schools and far more 17 year-olds were continuing their educations in school and college (60% in 1997 as opposed to 24% in 1979).[11] The education of girls benefited in particular: a national curriculum required that girls study mathematics, science and technology in schools as well as boys, and many did so for the first time at anything above a basic level. By the late-1990s the overall academic performance of girls at sixteen was stronger than that of boys; was nearly as good at age eighteen; and girls then comprised more than half of the annual entrants to British higher education.[12] Higher education, indeed, was also transformed by Conservatism through outright expansion and the cessation of the old divide between universities on the one side and polytechnics and colleges on the other. The policy, announced in 1989 and implemented in 1992, has seen the proportion of school-leavers going into higher education triple from its level of 13% in the late-1980s.

This assault on a set of institutions, practices and organisations was largely accepted and adopted by the Labour Party under Tony Blair when it came to power in 1997. Indeed, I can recall a debate much earlier, in 1988, once more held at Ruskin College, over the national curriculum for History, where at least one eminent socialist historian swayed the meeting by welcoming the centralisation of history studies. It would ensure, he argued, that all children would be given access to the crucial historical knowledge they required for citizenship, cultural engagement and political participation. That had to be an improvement on the rag-bag of historical studies, criss-crossing the past without direction and logic, which most children then endured.[13]

The Labour Party's intentions were clear in its initial education White Paper, *Excellence in Schools*, published in 1997 shortly after it took office. This made the raising of standards, under whatever educational structure that required, the key aim of the new government.[14] Tony Blair was hostile to a system of education that was insensitive to individual need and which offered only 'the bog-standard comprehensive school' as he described it in an important speech in 2001, to the vast majority.[15] Hitherto, this had been a solely Conservative critique, often understood as a proxy argument for the reintroduction of selection at age 11. Blair, too, saw teachers and their unions as obstacles to necessary changes: they tolerated and replicated low standards. His governments retained many Conservative innovations: standardised testing of pupils at different stages of their school careers; league tables of school academic achievement;

10 Department of Education and Science, *Consultation Document on the National Curriculum*, 3, cited in Jones, *Education in Britain*, 139. Paul Sharp, 'Central and Local Government', in Richard Aldrich (ed.), *A Century of Education* (London, 2002), 108-9.

11 Jones, *Education in Britain*, 136.

12 M. Arnot, M. David and G. Weiner, *Closing the Gender Gap: Post-War Education and Social Change* (Cambridge, 1999).

13 The historian mentioned was Gareth Stedman Jones, a Fellow of King's College, Cambridge and university lecturer in the Cambridge History Faculty.

14 Department of Education and Employment, *Excellence in Schools* (London, HMSO, 1997).

15 'Blair: Comprehensives have Failed', *Daily Telegraph*, 13 Feb. 2001.

the national curriculum; and the local management of schools. Several key Conservative agencies were also kept running: Ofsted, which policed school standards; the Teacher Training Agency; and the Qualifications and Curriculum Authority. It is true that grant-maintained status was abolished in 1998, by which time a sixth of English secondary schools had availed themselves of the new independence. But Labour introduced instead 'foundation' and 'community' status for schools, offering them more money – £500,000 in the case of my sons' secondary school in Oxfordshire – and the chance to specialise in a particular part of the curriculum, be it maths, science or modern languages. Labour had its version of the City Technology School, the City Academy, which was administered outside LEA control, often with sponsorship from the local business community, and funded directly by central government, and in which the more gifted children were to be offered specialist and accelerated learning. Labour also placed special emphasis on encouraging partnerships and collaborations between schools in the private and maintained sectors.[16]At the end of the 1990s the Labour government launched 'national strategies' for literacy and numeracy in primary schools which had been conceived and devised by the Conservative administration under John Major just a few years before.[17] In the Green Paper of 2001 entitled *Building on Success*, the Labour Party even envisaged a post-comprehensive era in which each secondary school would develop its own special features and deliver a curriculum suited to the needs of individual children.[18] Gone were the days when the Labour Party regularly debated the abolition of fee-based primary and secondary education.

Over the past thirty years in other words, a common set of trends has united governments of both parties in what is, in reality, a shared project to improve educational standards and opportunities in Britain. This has involved taking responsibility from intermediate institutions like the LEAs and teachers' unions, and simultaneously centralising it in Whitehall and also devolving it to the schools themselves, to governors and parents. Within the constraints of a supposedly non-selective comprehensive system, both parties have encouraged differentiation and academic excellence, though both parties have also refrained from reintroducing grammar schools and educational selection at age 11, which they recognise to be unpopular and not worth the fight: better to allow differentiation to develop naturally over time, aided by parental choice. Good and attractive schools, as both political parties have recognised, meet the needs of both families and the nation, and serve to encourage poor schools to do better. An educational system which in the 1960s and 1970s was celebrated because it seemed to have ended educational differentiation and competition has subsequently had just these features re-engineered at its heart. Since the 1980s, education spending has hovered around 5% of GDP per annum and 12% of total government expenditure: both parties have been equally invested. But neither will take much comfort

16 Andrew Adonis, 'A New Settlement between State and Private Education in England', *The 15th Specialist Schools and Academies Trust Annual Lecture, 28 June 2011*, http://andrewadonis.com/2011/06/28/a-new-settlement-between-state-and-private-education-in-england/.

17 Peter Cunningham, 'Primary Education', in Aldrich (ed.), *A Century of Education*, 9, 24.

18 'Are you a Bog-standard Secondary?', *Times Educational Supplement*, 16 Feb. 2001.

from the most recent findings of the OECD that Britain's 16-19 year olds, the beneficiaries of this expenditure and educational reorganisation, have the lowest essential skills of any OECD country, coming 24th out of 24 countries tested in basic literacy and 23rd in numeracy. In the UK today '9 million people struggle with basic quantitative reasoning or have difficulty with simple written information'.[19] Most of these are in younger age ranges: Britain's older citizens in the 55-65 age range are above the OECD average in their basic skills. In 1996 David Blunkett, the most charismatic and talented Education Secretary of the past generation, lamented that 'In spite of more than fifty years of universal state secondary education and thirty years of comprehensive education, the pattern of excellence at the top and chronic under-performance at the bottom persists'.[20] Twenty years of reforms later, it would seem we are no better for them.

As this brief sketch suggests, the central state has changed its role and its relationships in the modern period, and this in itself has driven change. As is often recounted, the British state first engaged formally with popular education in 1816 with the establishment of a parliamentary select committee to enquire into the education of 'the lower orders' of London, subsequently broadened to consider popular education throughout the country.[21] Over the subsequent two centuries we can discern three different periods of the central state's engagement with popular education: the first, running from the 1830s to the late nineteenth-century, when the state cooperated with, and acted through voluntary educational agencies; a second when the emergence and rapid development of local government from the 1880s provided the state with a local partner to implement policy and administer schooling; and a third, from the 1980s, when the central state, critical of the role of local government, has promoted initiatives at central and micro-level, and returned to cooperation with voluntary agencies, be they businesses, faith groups, local communities and parental organisations.

The early-Victorian state lacked the knowledge, expertise and machinery to order mass education in Britain; nor did it necessarily recognise this as a legitimate function of government. It was autocratic European states that dictated what their subjects should know and how they should be taught. The preferred *modus operandi* of the liberal Victorian state was to encourage and collaborate. The whig reformers provided funds for school building to the British and National educational societies respectively in the 1830s. Liberal cabinets took their research on education from organisations like the Social Science Association.[22] Both political parties tried to work with the existing voluntary, proprietary and endowed schools, whatever their demerits, to meet the needs of a growing population rather than impose a new system. The classic example of these collaborations was the most famous piece of educational legislation of the whole nineteenth century, W. E. Forster's Education Act of 1870. Rather than construct a universal system of state-regulated elementary education, the

19 *OECD Skills Study. Building Skills for All: A Review of England* (OECD, 2016), 9. *The Times*, 29 Jan. 2016, 1-2.

20 *The Independent*, 28 Feb. 1996, quoted in Gary McCulloch, 'Secondary Education', in Aldrich, *A Century of Education*, 47.

21 John Lawson and Harold Silver, *A Social History of Education in England* (London, 1973), 250.

22 Goldman, *Science, Reform and Politics*, 236-61.

legislation left in place existing denominational schools under the control of their different religious governing bodies, and plugged the geographical and social gaps in the provision of schooling with the innovation of elected School Boards, charged with the responsibility of founding and administering new rate-aided elementary schools in places where none existed. Voluntary action was conciliated and maintained in a compromise that kept down the costs to the exchequer, and limited social and religious opposition to state intervention.[23]

The Victorian state was not supine, however. It developed a remarkable education inspectorate in mid-century and an equally dedicated central educational bureaucracy from the 1870s, the happy conjunction of national need and the reform of the ancient universities in the 1850s and 1860s, which together drew talented young men emerging from Oxford and Cambridge into the higher levels of the civil service.[24] The educational investigations of the 1860s, via Royal Commissions of inquiry into elementary (Newcastle), endowed (Taunton) and public (Clarendon) schools, and the subsequent legislation in each case, are clear evidence of its commitment to educational provision and improvement. Indeed, in the case of the Endowed Schools Act of 1869, following the Taunton Commission, Victorian state activism exceeded the limits set for it by civil society. The creation of an Endowed Schools Commission with powers to ignore and overturn the wishes of school governing bodies, parents and local communities, and reapply educational endowments as its three members saw fit, was a step too far by Liberal radicals, causing a middle-class backlash with national political consequences, and a very instructive contrast with Forster's act in the following year, which it undoubtedly influenced in a cautionary manner. The controversies caused by the reform of endowed schools in the early 1870s are a reminder of the limits of Victorian state action and explain why more was not done, and done quickly, to address educational need in the nineteenth century.[25]

But from the 1890s the ideological and practical limitations on state activism in education began to disappear. In a collectivist age, education took its place as an obvious arena for state action which was increasingly demanded by the emergent labour movement and its allies. And in the new County Councils, established in 1888, the central state had a partner at the local level able to implement policy. Thus the second age of modern education was one marked by the alliance of central government, framing large measures of educational reform in each generation – in 1902, 1918 and 1944 – with local educational authorities, established by the first of those education acts, and charged with implementation. This had been prefigured in the report of the Bryce royal commission on secondary education (1894-96) which set out the principal themes in what became the 1902 Education Act. James Bryce and his colleagues had recommended the establishment of a central education authority

23 Patrick Jackson, *Education Act Forster: A Political Biography of W. E. Forster, 1818-1886* (London, 1997).

24 Gillian Sutherland, *Policy Making in Elementary Education 1870-1895* (Oxford, 1973).

25 Lawrence Goldman, 'The Defection of the Middle Classes: The Endowed Schools Act, the Liberal Party, and the 1874 Election', in Peter Ghosh and Lawrence Goldman (eds.), *Politics and Culture in Victorian Britain: Essays in Memory of Colin Matthew* (Oxford, 2006), 118-135.

> not in order to control, but rather to supervise the Secondary Education of the country, not to override or supersede local action, but to endeavour to bring about among the various agencies which provide that education a harmony and co-operation which are now wanting.[26]

In the twentieth century, and following these principles, the central state provided most of the funds along with inspection and the LEA was the provider of services. Everyone concerned talked and wrote of 'a partnership between the central authority and the LEAs'.[27] But notably, within the legislative framework provided, the LEAs were given considerable freedom and latitude. As Jones has observed of the 1944 Act,

> Local authorities had some power to organize and reorganize schooling. In addition, because the Act made no stipulations about curriculum and pedagogy, teachers had considerable capacities to initiate school-level change … [and] … the elements of decentralization built into the Act were later the basis for significant initiatives of local curricular reform.[28]

It was this partnership and the autonomy it allowed at a local level that has been gradually eroded in the present, third era of educational administration. The state has looked for new local partners to run and sponsor schools, among them businesses, faith groups, community organisations and parents. The intermediate LEAs have been squeezed between conflicting trends towards centralisation on the one hand and localism on the other.[29] Thus in some views educational administration has gone backwards to its Victorian roots with 'the return of the system of over a century ago in which there were two tiers – a central government department and individual school governing bodies with little or nothing in between'.[30] It may be argued that today – 2016 – educational administration has returned to its pre-1870 phase in which central educational authorities deal directly with educational providers, many of which are in the voluntary sector, and individual schools.[31]

The apotheosis of this phase are the new 'free schools', established since 2010 with the support of the Conservative-Liberal coalition government under the Academies Act of that year. A free school in England is a type of Academy, a non-profit-making, independent, State-funded school which is free to attend but which is entirely outside the control of local authorities and the dense regulatory framework attaching to most state schools. It is as if the state has returned to the 1830s, once more making grants to providers of education rather than providing education through its own agencies. And in another view the contemporary free school has revived a much older tradition of radical and progressive schooling that dates back to the enlightenment projects of the English followers of Rousseau like the Edgworths;

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26 *Royal Commission on Secondary Education* (Bryce Report) (London, HMSO, 1895), vol. 1, 257.
27 Paul Sharp, 'Central and Local Government', in Aldrich, *A Century of Education*, 93.
28 Jones, *Education in Britain*, 20.
29 Sharp, 'Central and Local Government', 93.
30 P. R. Sharp and J. R. Dunford, *The Education System in England and Wales* (London, 1990), 88.
31 Richard Aldrich, 'Conclusion', in idem, *A Century of Education*, 231.

to the ideas of Robert Owen in his *New View of Society*; to the practical embodiment of progressive ideals in schools like Bedales, King Alfred's, and Bryanston (founded, respectively, in 1893, 1897 and 1928); and to the impact in the inter-war era of child-centred theories of education often derived from European and American educationists – Dewey, Montessori, Piaget and others.[32] Once again, the most recent developments in schooling actually revive a pre-existing tradition, taking us back to the future, though the difference in this case is that contemporary free schools, of which there are now several dozen in England, are funded by the state though they are outside normal state regulation. Supporters of state education regularly question the educational standard of free schools: they should recall an earlier proponent of educational voluntarism, the editor of *The Leeds Mercury*, Edward Baines, who contended in 1848 that the principle of educational liberty trumped everything else:

> We have as much right to have wretched schools as to have wretched newspapers, wretched preachers, wretched books, wretched institutions, wretched political economists, wretched Members of Parliament, and wretched Ministers. You cannot proscribe all these things without proscribing Liberty.[33]

The re-emergence of progressive schooling is hardly the only, or the most notable of the continuities to be found in recent educational history. Throughout the nineteenth century the so-called 'religious difficulty' stunted educational development as the Anglican church and the protestant dissenting denominations fought each other, and fought the state if they felt that their claims were being ignored or downgraded. Beginning with opposition to Brougham's 1820 bill 'for better promoting the means of education for His Majesty's subjects in England and Wales' which, in seeking to conciliate Anglican opponents only succeeded in antagonising Brougham's erstwhile non-conformist supporters, the religious difficulty ensured that for a generation in the mid-Victorian era educational development was at a standstill. Conservatives would not support educational reform if it assisted non-conformist schools, and dissenters were swift to oppose any educational development that might weaken their control of their own schools, or their stake in the educational system as a whole, or which handed local control to Anglicanism. At the centre, the Committee of the Privy Council on Education, created in 1839, was seen by non-conformists as an agent of the established church.[34] But devolving education to the localities, and paying for it out of a local rate, was considered a sure recipe for tension between the sects over school governance and over the type of religious teaching offered. Thus, and to the frustration of many, little could be done for national education between the 1840s and 1860s.

It is widely accepted that as late as the Edwardian period, the Conservative's 1902 Education Act, by antagonising non-conformists, had the political consequence of assisting a

32 R. J. W. Selleck, *English Primary Education and the Progressives, 1914-1939* (London, 1972).

33 Edward Baines, 'On the Progress and Efficiency of Voluntary Education in England', *Crosby Hall Lectures on Education, Congregational Board of Education*, (London, 1848), 39.

34 Lawson and Silver, *Social History of Education*, 269.

Liberal election victory in 1906. But this was the last time that the 'non-conformist conscience' played a role of any scale in British politics, and after the 1944 Butler Act 'the religious difficulty' was, it was thought, laid to rest, especially in a society that was increasingly secular. Whether concerning the form of daily worship, the curriculum of RE lessons, or the role of religious authorities in the governance of voluntary aided schools (in which schools religious denominations have influence over the ethos and policy of the school), these issues were of declining significance. But large-scale immigration in the past twenty years has led to the re-emergence of 'the religious difficulty' in a new guise and with wider cultural and racial implications. The growth of the Muslim population in Britain in particular, though of many other non-Christian denominations as well, and the cultural and racial tensions that immigration, focused on specific areas, has created, have together developed a new set of challenges for schooling in general and for many inner-city schools in particular. This is the 'religious difficulty' for our age, though it also now includes questions of school governance, teacher recruitment, the application of the national curriculum, and the language of instruction in multicultural communities, and also in unicultural communities where there is a dominant religion or national grouping which is not indigenous. Indeed, the number of school places in areas that have experienced the largest population gains in the past decade as a consequence of immigration is inadequate for the number of children requiring an education. The issue of the future in many inner-city areas will be another issue re-emerging from the Victorian past: how to establish enough schools in the places where they are most required.[35]

The economic arguments driving recent educational changes in Britain are also nothing new. It has been a central feature of both the Thatcherite and Blairite educational projects that educational reform should give young people the skills and aptitudes required for work, even at the expense of an earlier emphasis on self-cultivation, self-expression and group participation in schooling. Whether measured in terms of core funding, teacher training, time devoted to them in the curriculum, and the public esteem now attached to them, mathematics, science and technology as the basis of successful enterprise, have been emphasised; the humanities have suffered. This has gone on at all levels of the educational system, most recently in universities, where, since 2012, the only undergraduates to attract government funding are those studying the so-called STEM subjects (science, technology, engineering, mathematics). An apocryphal story is told in Oxford of a day when Margaret Thatcher returned to Somerville College where she had studied Chemistry and came across a hapless undergraduate in a corridor: 'And what are you reading?' asked the prime minister. 'Modern History' was the undergraduate's response, to which the prime minister is said to have replied 'What a luxury!'

If recent governments have acted upon these arguments, they have been heard many times before. Even in the era of university foundation and expansion in the 1960s when the

35 'Crisis of Pupils Without a Place', *London Evening Standard*, 22 July 2015, 1. The secondary school population in London is expected to grow from 488,160 to 560,880 in the next 5 years, leaving a shortfall of approximately 35,000 places.

humanities were at the apogee of their historic esteem, the then Labour prime minister, Harold Wilson, often voiced the concern that Britain was being surpassed by nations with stronger and more technically-orientated educational systems. This was the context of his famous reference in his 1963 speech at the Labour Party conference to the 'white heat of the technological revolution' which, he said, would require us to make 'far-reaching changes in economic and social attitudes which permeate our whole system of society'.[36] But the combination of a concern for Britain's international economic competitiveness and scepticism over national educational values has a long Victorian pedigree. Lyon Playfair, the outstanding scientist-statesman of the nineteenth century, raised the alarm after his participation as a judge at the Paris Universal Exhibition in 1867, barely a decade and a half after the supposed demonstration of British economic supremacy at the first 'Great Exhibition' of 1851. He believed that a demonstrable decline in Britain's industrial position was associated with the low standard of indigenous technical education, and his public campaign led to the appointment in 1868 of a select committee of parliament under the chairmanship of Bernhard Samuelson, the industrialist and MP.[37] Samuelson took up the issue, made it his own, and eventually chaired the Royal Commission on Technical Instruction, whose 1884 report noted that 'our industrial empire is vigorously attacked all over the world. We find that our most formidable assailants are the best educated peoples.'[38] This report and others like it led to the 1889 Technical Instruction Act which permitted the new county councils to apply income from local rates to technical education, an early example of the state's collaboration with the new institutions of local government discussed above, as well as evidence of national concern over inadequate educational support for British industry.[39]

Another feature of recent pedagogy with a long history behind it is the focus on testing and examinations that united the approaches of both the Thatcher and Blair administrations to schooling.[40] We hear continually that our children are the most tested in the developed world, facing Standard Attainment Tests at ages 7, 11 and 14 (key stages 1, 2 and 3); and sequential sets of public examinations which are crucial for both work and higher education at ages 16, 17 and 18, respectively the GCSE, AS and A2 examinations. Most of this testing takes the form of summative written examinations which may discriminate against many otherwise proficient pupils. All of it has a baleful effect on learning because teaching is 'to the test' – it is limited to, and constrained by the syllabus and the requirements of an examination regime. Teaching which is exploratory, experimental, captivating for its own sake, or just 'off the beaten track', is strongly discouraged; creativity and genuine interest are thereby stifled. All this and more was traversed by the Victorians.

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36 http://www.theguardian.com/science/political-science/2013/sep/19/harold-wilson-white-heat-technology-speech.

37 'Playfair, Lyon, first Baron Playfair (1818-1898), Politician and Chemist', *ODNB*, http://www.oxforddnb.com/view/article/22368.

38 'Samuelson, Sir Bernhard, first Baronet (1820-1905), Ironmaster and Promoter of Technical Education', *ODNB*, http://www.oxforddnb.com/view/article/35930.

39 Lawson and Silver, *Social History of Education*, 346.

40 Alison Woolf, 'Qualifications and Assessment', in Aldrich, *A Century of Education*, 206-27.

The development of the public examination in the nineteenth century was, in itself, a force for good. The ancestors of our present-day A-levels, for example, the Oxford and Cambridge Local Examinations which were devised, introduced and adopted by many proprietary and secondary schools from the late-1850s, provided a syllabus where none had existed hitherto; helped raise the standards of secondary schooling as almost nothing else could have done; gave parents an indication of the relative merits of a school when they came to choose a place for their offspring; and offered to a few gifted, high-achieving children a route to higher and professional education.[41] But the growing use of examinations also stunted and cramped the education offered and the child herself. No one saw this more frequently or more closely than Edmond Holmes who, after Oxford, spent his whole career as a member of the inspectorate, eventually making chief inspector of elementary schools in 1905.[42] Throughout his 40 years he opposed the testing regime and he eventually published a condemnation of it in one of the most famous educational volumes ever published in Britain, *What Is and What Might Be* (1911). As Holmes wrote there,

> In every Western country that is progressive and "up to date", and in every Western country in exact proportion as it is progressive and "up to date", the examination system controls education, and in doing so arrests the self-development of the child, and therefore strangles his inward growth.[43]

A generation later the Spens Report into secondary education, undertaken by the Consultative Committee of the Board of Education and published at the end of 1938, noted that the School Certificate examinations, roughly equivalent to today's GCSE exams at 16, though then only taken by the most able students, rather than following the curriculum were determining it.[44] Plus ça change …

Anyone under the illusion that today's regime of testing and the micro-management of teaching is an entirely new development of the present age should spend a few minutes with the Revised Code, so-called, which dominated elementary education for thirty years after its introduction in 1863. Devised by Robert Lowe, the radical Liberal who was Vice-President of the Committee of the Privy Council on Education – the nearest thing England then had to a central educational authority – and later Chancellor of the Exchequer in Gladstone's first administration, this made the funding of schools conditional on, and proportional to the regular attendance of pupils and their success in tests applied by the inspectorate. It was created for political and budgetary reasons. In parliament there was opposition on principle

41 David Allsobrook, *Schools for the Shires: The Reform of Middle Class Education in Mid-Victorian England* (Manchester, 1986); John Roach, *Public Examinations in England, 1850-1900* (Cambridge, 1971); idem, *A History of Secondary Education in England, 1800-1870* (Harlow, 1986).

42 'Holmes, Edmond Gore Alexander (1850-1936), Inspector of Schools', *ODNB*, http://www.oxforddnb.com/view/article/46694.

43 Edmond Holmes, *What Is and What Might Be: A Study of Education in General and Elementary Education in Particular* (London, 1911), 8.

44 Lawson and Silver, *Social History of Education*, 389; 'Spens, Sir William [Will] (1882–1962), Educationist', *ODNB*, http://www.oxforddnb.com/view/article/36214.

to any system of national education that smacked of central imposition; there was also opposition to the cost of the growing annual grants given to the voluntary schools run by the different religious denominations. Known as 'payment by results', the Revised Code was designed to set limits to central expenditure by paying fixed amounts of grant for each pupil subject to satisfactory testing. Each child meeting the school attendance target was worth 4 shillings to the school, and each passing the examinations earned 8 shillings.[45] Precisely the same factors are rewarded under today's school funding regime. Even the nomenclature is the same: a regime of Standard Assessment Tests in the UK today would surely recognise a Victorian world where children were presented for examination under the Revised Code in six so-called 'standards'. A subsequent code, introduced in 1882 by the then Vice-President of the Council, the Liberal A. J. Mundella, related grants paid to schools to their classification as 'fair', 'good' and 'excellent'.[46] It sounds distinctly like the results of an Ofsted inspection of schools today, though the classification of school performance up to 2012 was fourfold: outstanding, good, satisfactory, inadequate.[47]

Those things not paid for were not taught, of course, so the curriculum after 1863 was almost wholly devoted to the 'three Rs', which alone attracted grant. Rote learning of a type easily examined was encouraged; real learning was diminished; teachers suffered quite as much as their pupils; and as Matthew Arnold explained, where inspectors were once able to interrogate a whole class and engage with them collectively, he was now required only to test each student individually and mechanically.[48] Lyon Playfair told the Social Science Association as President of its Education Department at its Newcastle congress in 1870 that the schooling of working-class children in this manner was 'impoverishing the land. It is disgracefully behind the age in which we live, and of the civilization of which we boast.'[49] Holmes wrote in 1911 of the 'code despotism' which endured for a generation up to 1897 when the system of 'payment by results' ended for most schools. It was a 'deadly system … which seems to have been devised for the express purpose of arresting growth and strangling life, which bound us all … with links of iron'[50]

The purpose of today's school examinations is not only to test the pupils but the school itself: to rank it in relation to other schools so that the results can be published, as they have been since the 1990s, in a standardised form accessible to parents, who can make appropriate judgments and take appropriate action. Good schools will prosper, their rolls full and their reputations high; weaker schools will be incentivised to improve or face being placed in 'special measures' as the term of the age has it. This, too, is not new: Victorian investigations

45 Lawson and Silver, *Social History of Education*, 290-92; J. Winter, *Robert Lowe* (1976); D. W. Sylvester, *Robert Lowe and Education* (1974); A. Patchett Martin, *Life and letters of the Right Honourable Robert Lowe, Viscount Sherbrooke*, 2 vols. (1893).

46 P. Gordon and D. Lawton, *Curriculum Change in the Nineteenth and Twentieth Centuries* (London, 1978), 11-16.

47 From 2012 the category of 'satisfactory' was rebadged as 'requires improvement' with the expectation that the school would move onwards and upwards in short order.

48 Francis Sandford (ed.), *Reports on Elementary Schools 1852-1882 by Matthew Arnold* (London, 1889), 98-9.

49 Lyon Playfair, 'Address on Education', *National Association for the Promotion of Social Science*, *Transactions*, 1870, (London, 1871), 46-7.

50 Holmes, *What is and What Might Be*, vi-vii.

into schooling recognised a common responsibility to improve standards for the benefit of parents, who, by the end of the century, appreciated more keenly 'the value of a good school' and demonstrated 'an increasing desire to secure the benefits of efficient teaching for their children'.[51] No doubt London dinner parties were dominated in the 1890s as in the 1990s by talk of schools and little else. As the late Richard Aldrich pointed out, 'the list of subjects prescribed under the National Curriculum of 1988 bore an uncanny resemblance to those of the Secondary School Regulations of 1904.'[52]

Even our contemporary discourse about educational aims and principles shows signs of retrospection. In the nineteenth century the dominant themes in educational discussion were practical and religious in nature: how were the schools required for national education to be built and governed; how were their standards to be assured; and how was the state to achieve its aim of mass elementary education while working with and through the different religious denominations? Twentieth century educational discourse, in an era when the state had largely won control of schooling, was about social equality: how could equal educational opportunities be assured for all pupils as a basis for a more socially-just society? As the famous 1943 white paper on *Educational Reconstruction* asserted, 'the nature of a child's education should be based on his capacity and promise, not by the circumstances of his parents'.[53]

The Norwood Committee in 1943 believed that schoolchildren could be divided into three groups according to their abilities: a first group composed of those 'who can grasp an argument or follow a piece of connected reasoning'; a second group where 'interests and abilities lie markedly in the field of applied science or applied art'; and a third who 'deal more easily with concrete things' than ideas, and who were 'interested in things as they are'.[54] These three types of mind would be assigned to three types of school: grammar, technical and modern. This was an extension of the earlier findings of the Hadow Report into *The Education of the Adolescent* of 1926 which had also advocated a tripartite school structure: grammar schools for the academic children, modern schools for the average child and technical schools after 13 years of age for those who required vocational skills.[55] This differentiation was continued in the later Spens Report, published by the Board of Education in 1938, which, on the basis that a 'single liberal or general education for all is impracticable', adopted the same structure as the Hadow Report.[56]

This rigid style of socio-educational analysis was already becoming outmoded by the time it was written: the Norwood Report was criticised at the time of its publication for its

51 M.E. Sadler and J. W. Edwards, 'Public Elementary Education in England and Wales, 1870-1895', *Special Reports on Educational Subjects 1896-7* (London, 1897), 8.

52 Aldrich, 'Conclusion', in idem, *A Century of Education*, 231. See also R. Aldrich, *Education for the Nation* (London, 1996), 23-39.

53 *Educational Reconstruction* (White Paper, HMSO, London, 1943), 20.

54 *Report of the Secondary School Examinations Council*, *Curriculum and Examinations in Secondary Schools* (Norwood) (London, HMSO, 1943), 2-3; Jones, *Education in Britain*, 21.

55 H. Loukes, 'The Pedigree of the Secondary Modern School', *British Journal of Educational Studies* (1959), 7, 138.

56 *Report of the Consultative Committee on Secondary Education with special reference to Grammar Schools and Technical High Schools* (Spens) (London, HMSO 1938), 2.

educational conservatism.[57] But all three reports of the 1920s, 1930s and 1940s, into secondary education, with their shared psychological and social assumptions, may be compared with another tripartite division applied to secondary education by a much earlier enquiry, the Taunton Royal Commission of the 1860s which enquired into endowed and so-called 'middle class schools', and which also envisaged three differentiated grades of secondary education, with their different curricular and different schools, for the sons of tradesmen up to 14; for the sons of local professionals up to 16; and for those destined for the university who would leave at 18.[58] It would seem that for a nearly a century, English education was dominated by the compulsion to divide children and their schooling in this crude manner, which, like London Transport buses, always came along in threes. At least by the 1940s academic ability rather than social station was to be the determinant of educational level and opportunity. The admirable determination of the comprehensive school movement from that time to construct an educational system in which social background was irrelevant and all children would be treated the same was a further development, far beyond the thinking of the Norwood committee, which has shaped educational thinking since the Second World War.

But retrospection has emerged again in the past decade as the different issue of educational and social mobility has entered the public sphere. The concern now is that too few children from average and humble social backgrounds are reaching the best universities, attaining the highest qualifications, and filling the leading positions in business, the professions and public life. These remain the preserve of the children of the upper-middle-classes many of whom have been educated in private, fee-paying schools.[59] Often explicit in this discussion is a comparison between the present generation and those who were schooled in the period between 1950 and 1975 who enjoyed historically high rates of social mobility. Paradoxically, concern over low or static rates of social mobility is advanced by the same groups on the British left in education and politics who defend educational equality. Their opponents make the case that it is the movement for educational equality in comprehensive schools which has depressed social mobility by lowering educational standards and undermining personal aspiration in schools constructed to meet the needs of the average child. And at this point the debate conflates with the wider debate we have already encountered over the merits of unselective secondary education – a debate that both political parties believed to have been settled, at least if we are to judge by their actions since the 1980s in trying to inject diversity and even elements of selection into the secondary school system. However we may read and understand the present politics of

57 'Norwood, Sir Cyril (1875-1956), Educationist', *ODNB*, http://www.oxforddnb.com/view/article/35262.

58 On the three grades of endowed secondary schools advocated by the Taunton Commission, see Brian Simon, 'Systematisation and Segmentation in Education: The Case of England'; Hilary Steedman, 'Defining Institutions. The Endowed Grammar Schools and the Systematisation of English Secondary Education'; David Reeder, 'The Reconstruction of Secondary Education in England 1869-1920', in D. K. Müller, Fritz Ringer, and B. Simon (eds.), *The Rise of the Modern Educational System* (Cambridge, 1987), 99-101; 111-34; 137-41.

59 'Social Mobility: The Charts that Shame Britain', *The Guardian*, 22 May 2012, http://www.theguardian.com/news/datablog/2012/may/22/social-mobility-data-charts.

secondary education, the developing discourse on social mobility is one that depends on explicit comparisons with the past and is yet another example of the circularity of educational debate and policy: we now seem to want what we jettisoned in the 1960s and 1970s when the majority of selective grammar schools, popularly understood as the engines of social mobility, were scrapped.

The choice between equality and mobility had been presented to the labour movement as long ago as the years before the First World War. The development of workers' education at this time depended on the patronage of leading educationists, academics, politicians and institutions, notably the University of Oxford.[60] Oxford formalised its role in a famous report, *Oxford and Working Class Education*, published in 1908, which set out the terms of an alliance between the university – very soon several *universities* – and the Workers' Educational Association which had been founded in 1903. Oxford would provide financial support and teachers for the new tutorial classes to be established in industrial districts; the WEA would organise those classes and recruit the students. In a famous section of the report, Oxford acknowledged a responsibility to pick out the future leaders of the labour movement and educate them for their coming public responsibilities: 'The Trade Union secretary and the 'Labour Member' need an Oxford education as much as and will use it to as good ends, as the civil servant or the barrister.'[61]

But as one future 'Labour Member' – indeed a future Labour chancellor of the exchequer, Philip Snowden – had expressed the opposing view at a conference of working class groups in Oxford in August 1907, 'I would rather have better education given to the masses of the working classes than the best for a few. O God, make no more saints: elevate the race.'[62] And when the university offered to some of the first WEA students in tutorial classes the possibility of residential scholarships to leave home and study at the university, it met, at least at first, with outright opposition. In the reported words of one class member from Rochdale who was asked his views on whether some students should be sent from the classes to Oxford,

> Workers have as much right in Oxford as anyone, but not in ones and twos…Present proposition bad. We who have never had a fortnight's holiday in our lives have suddenly dangled before us the chance of a year or two at Oxford, which one is to get & another not. Tell the Committee straight we absolutely refuse this offer, thanking them for nothing.[63]

Social mobility and educational equality will be as difficult to reconcile today as they were in

60 Lawrence Goldman, *Dons and Workers: Oxford and Adult Education Since 1850* (Oxford, 1995), 103-62.

61 *Oxford and Working-Class Education: Being a Report of a Joint Committee of University and Working-Class Representatives on the Relation of the University to the Higher Education of Workpeople* (1908) (2nd edn. Oxford, 1909), 48.

62 'Oxford Joint Conference on Education of Workpeople, August 10th 1907', Mss Minute Book, ff. 28-30, Workers' Educational Association Archives, London Metropolitan University, f. 77.

63 'Professor [H.H.] Turner's Report on his visit to Longton and Rochdale, Jan. 1911', Papers of the Department of Continuing Education, Oxford University Archives, DES/F/2/1/8, f. 6.

1911 when this comment was reported back to the university authorities in Oxford; the problem of reconciling them is as old as are attempts to address educational disadvantage itself.

It would be facile to argue that we can *only* discern circularity and retrospection in the history of English education: of course there are powerful forces and events that have accelerated change and led policy in genuinely new directions. Major wars in the twentieth century ended with important structural reforms embodied in the Balfour Act of 1902, the Fisher Act of 1918, and the Butler Act of 1944: in education as in so much else wars were the occasions for social reforms that had long been debated and discussed. At different stages intellectual developments emerged as key drivers of change. The period from the 1780s to the 1820s saw a type of intellectual struggle for the educational future between the competing educational philosophies of radicals like Paine and Godwin; followers of Rousseau like the Edgworths; Benthamite utilitarians; and conservative evangelicals within the Church of England. A century later, the ideas of T. H. Green, the Fabians, and Edwardian political progressives in general made education central to the development of the good democratic society, the key means through which to encourage individual self-realisation, socialisation, citizenship and active participation, and to build a society based on collaboration rather than competition.[64] This was the milieu from which the idea of workers' education emerged. In the inter-war period policy and thinking were influenced by child-centred educational theories. After the Second World War, as we have seen, education was strongly influenced by egalitarian social theories, though interestingly, the most influential of these theorists and the author of *Equality*, published in 1931, R. H. Tawney himself, believed in the selection of the most academically able, and also in its corollary, differentiation according to ability and aptitude in secondary education.[65]

One historian of recent educational development has noted how 'each significant policy actor in education seems compelled to go over past ground, and to justify their current preferences in terms of a history which they will continue, or recover, or redeem'.[66] Whether this is true of education in all countries and jurisdictions is unclear, but why should this be the case in England, as it most definitely is? One explanation is the natural swing of the pendulum in a democratic society as one government or one generation follows another and tries to address educational problems by alternative methods having rejected the solutions offered by their predecessors. Another explanation may derive for the very length of time during which we directly experience education ourselves, and indirectly experience it through our children. We access medical services intermittently, for example, and generally for only short periods of time, giving little opportunity to form a view of the system as a whole. The arcane details of social security and pensions can hardly be held in the head, change frequently, and are the preserve of specialists. But we all have time to form a view on

64 Peter Gordon and John White, *Philosophers as Educational Reformers: The Influence of Idealism on British Educational Thought and Practice* (London, 1979).

65 Lawrence Goldman, *The Life of R. H. Tawney: Socialism and History* (London, 2013), 199-216.

66 Jones, *Education in Britain*, 6.

education and to judge the different methods and structures through which it is delivered. And given the universality of this experience and its duration we have the opportunity to make comparisons, whether across different systems in the present or with educational organisation and practice in the past. Hence the scope for retrospection and return. Until the 1980s, trainee teachers taking the one-year Post-Graduate Certificate in Education, the basic qualification for teachers in English secondary schools, were largely taught in the lecture room (rather than on the job as now) and took a course in the history of education as well as in educational sociology and psychology. These courses no longer exist in a training course much more focused on developing the practical skills of teaching, perhaps under the misapprehension that 'the past is another country' from which we can learn little. It is customary at junctures like this to repeat the oft-quoted words of George Santayana that 'those who cannot remember the past are condemned to repeat it'. But that is not the case being made in this essay. Based on the evidence of the circular history of English education over the past two centuries it is rather that even those who *do* remember the past are condemned to repeat it.

Management of and Local Networks for Educating Vagrant Children: A Case Study on the Manchester Certified Industrial Schools in the Late Nineteenth Century*

Makiko Santoki**

Abstract. This article examines how the local people tried to solve the public problem concerning the treatment of vagrant children in Manchester. In urban society, including Manchester, vagrant children were one of the most serious problems in the maintenance of public order, and children and their welfare became the object of national attention. In late nineteenth-century England, the government intervened in the management of the education and care for vagrant children, which started as a movement led by the volunteers. The Manchester juvenile refuge and school of industry, the predecessor of the Manchester Certified Industrial Schools, also was established by volunteers in1846, however, it decided to seek a national certification because of financial trouble. The 'certified' industrial school had to obey the regulations and accept the inspection in exchange for a government grant.

The person who found and inquired about vagrant children on the streets in Manchester was the beadle, an officer of the Manchester School Board. When the beadle found vagrant children, he inquired closely regarding the condition of the family situation, and then he decided on the reaction to the family and child. Finally, most frequently, the parents were warned. The Manchester Certified Industrial Schools was not only way to treat vagrant children found on the streets by the beadle. However, the Manchester Certified Industrial Schools was the extremely important place to send vagrant children into the local community.

The children of the Manchester Certified Industrial Schools could apprentice under a master hired by the school and a high percentage of children were able to keep their jobs after leaving the school. The managers of the Schools called their own schools 'truly Industrial Schools' and insisted that the moral reformation and acquisition of industriousness occurred through their industrial education. The main objective of the Manchester Certified Industrial Schools was not to raise vagrant and destitute children in a more favourable situation or to prevent the children from entering a career of crime but to send the children into society 'successfully' as workers. Moreover, the managers of the Schools couldn't fulfil these duties without cooperating with other institutions and people. They served as a welfare complex to deal with the education of vagrant children using the networks of the people of Manchester and other local authorities, cutting across religious, political, and regional boundaries.

Introduction

This paper presents a case study on government intervention in the management of children's education in late nineteenth-century England. In particular, I focus on the

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education of vagrant children, which started as a movement led by volunteers in the first half of the nineteenth century.[1] In urban society, including Manchester, vagrant children were one of the most serious problems in the maintenance of public order, because such 'children ran wild on the streets, surviving as best as they could, often by crime.'[2] Before the state intervened, some social reformers (many of whom were influential members of society, such as Mary Carpenter[3]) insisted on the necessity of saving children from vice and a life of crime, and many charitable activities were undertaken to support the poorest children.

In addition to the maintenance of social order, another reason that children and their welfare became a priority was suggested by Henry Mayhew in 1862:

> There is but one way to empty the prisons, and that is by paying attention to the outcast children of the land. So long as the state forgets its paternal duty, just so long must it expect its offspring to grow up vicious and dishonest; and it is simply for our wicked neglect of the poor desolate and destitute little creatures about us, that our country swarms with what are termed "the dangerous classes."[4]

Namely, as Harry Hendrick emphasized, social reformers 'obviously strove to accomplish goals of national importance with respect to incorporating the 'dangerous classes' within the boundaries of civil society'; in particular, 'children were given a new social and political identity as belonging to 'the nation' in late nineteenth-century England.[5] Not only the volunteers but also the government realized the importance of education for young offenders rather than punishing them through such volunteer activities.

Industrial schools, established since the mid-nineteenth century, were institutions for 'the care and education of vagrant, destitute, and disorderly children.'[6] While the study can trace many of the industrial schools' origins to charitable activities, especially in the ragged school movement, the 'certified' industrial schools were prescribed by the Industrial School Act (1857), which set regulations to be obeyed by each industrial school in exchange for a government grant. The Industrial School Act empowered magistrates to sentence vagrant children between seven and fourteen years of age to industrial schools under the control of the Committee of the Privy Council on Education. In 1861, another act extended the range of categories of children to include those (1) apparently under age fourteen and found begging or receiving alms; (2) apparently under age fourteen, and found wandering and having no home or visible means of support, or found in the company of reputed thieves; (3) apparently

1 Jeannie Duckworth, *Fagin's Children: Criminal Children in Victorian England*, London: Hambledon and London, 2002, ix, 214-216.

2 *Ibid*., ix.

3 M. Carpenter, *Reformatory Schools for the Children of the Perishing and Dangerous Classes, and for Juvenile Offenders*, London: Richard Barrett, 1851.

4 Henry Mayhew, *The Criminal Prisons of London and Scenes of Prison Life*, London: Griffin, Bohn and Company, 1862, 414-415.

5 Harry Hendrick, *Child Welfare: Historical Dimensions, Contemporary Debate*, Bristol: The Policy Press, 2003, 19.

6 'A bill [as amended in committee] to make better provision for the care and education of vagrant, destitute, and disorderly children, and for the extension of industrial schools', 6 March, 1857, *House of Commons Parliamentary Papers*, 61. 3.

under age twelve and having committed an offence punishable by imprisonment or less; and (4) under age fourteen, whose parents declare them to be beyond their control, and were therefore under the responsibility of the Home Secretary for administrative convenience.[7]

The research on industrial schools can be classified into two large groups. One emphasizes the role of the care and protection of destitute children early in the history of industrial schools,[8] while the other addresses the treatment of juvenile offenders in reformatories and industrial schools.[9] The industrial schools had the functions of both care and punishment because many vagrant children were neglected by their parents and most destitute children could not survive without turning to crime, including not only stealing but also begging or sleeping outside.

Therefore, many researchers have judged the signification of industrial schools based on these points; namely, the schools took children from a 'perishing and dangerous' background and allowed them to grow up in a more favourable one. Moreover, they stressed in an 1884 report on reformatories and industrial schools that the government accepted that the effect of the system of certified schools was 'credited' and that they 'undoubtedly had the effect of preventing larger numbers of children from entering a career of crime.'[10]

In contrast, some researchers have pointed out the low level of the education, especially industrial education, provided in industrial schools. W. Prahms concluded that teaching children how to work and earn a living, which was one of the Newcastle Industrial School's most important purposes, was flawed because the school 'wanted to teach general work skills (e.g., wood chopping) rather than specific trades', and yet, 'they all did end up teaching particular trades' (e.g., tailoring, shoemaking, and printing).[11] In addition, M. C. Barnet pointed out that the report to the Secretary of State for Home Department of the departmental committee on reformatory and industrial schools of 1896 severely criticized the industrial training at industrial schools, as 'much of it had little educational value, and often it was directed to moral reform of the children rather than to the essential end of enabling them to earn good wages from the moment of their discharge.'[12]

However, this evaluation cannot be applied to the case of the Manchester Certified Industrial Schools because children could apprentice under a master hired by the school and a high percentage of children were able to keep their jobs after leaving the school. How did the Manchester Certified Industrial Schools produce such results?

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7 Gordon Rose, *Schools for Young Offenders*, London: Tavistock Publications Limited, 1967, 6.

8 For example, Ginger S. Frost, *Victorian Childhoods*, London: Praeger Publishers, 2009, 135.

9 Wendy Prahms, *Newcastle Ragged and Industrial School*, Stroud: Tempus Publishing Limited 2009, 89; Duckworth, *Fagin's Children*, 237; John A. Stack, 'Reformatory and industrial Schools and decline of child imprisonment in mid-Victorian England and Wales', *History of Education*, 21-1, 1994, 59-73.

10 *Report of the Reformatory and Industrial Schools Commission,* 1884, 45; Prahms, *Newcastle Ragged and Industrial School*, 19; Duckworth, *Fagin's Children*, 236-237.

11 Prahms, *Newcastle Ragged and Industrial School*, 89-90.

12 Mary G. Barnett, *Young Delinquents: A Study of Reformatory and Industrial Schools*, London: Methuen & Co. Ltd 1913, 22; *Report to the Secretary of State for the Home Department of the Departmental Committee on Reformatory and Industrial Schools. Vol. I. Report and Appendices*, 1896, 19c & 20c House of Commons Parliamentary Papers, Hiroshima University Central Library, 102. 385-388.

To answer this question, the current paper will show (1) the reason that the Manchester Certified Industrial Schools accepted intervention from the government; (2) how the Manchester Certified Industrial Schools were managed by the state, local governments, and school managers in providing education for vagrant children with respect to financing and organization; and (3) how the local people and government made an effort to try to solve a local public problem concerning the treatment of vagrant children.

1. From Charity to Schools Certified by the State

As Eric J. Hewitt pointed out, 'people living in towns like Manchester during the nineteenth century experienced a period of changes that was revolutionary in pace and scale.'[13] Until the mid-nineteenth century, the population of Manchester increased not only in absolute numbers but also in proportionate terms. Around 1700, the estimated population in Manchester (including Salford) was 8,000, and by 1841, it had increased to 311,000, making it the second most populated city in Britain.[14] Of the population in 1840s Manchester, 5–8% was destitute, homeless poor who earned only approximately 1*s*. each per week on average.[15]

Amid rising anxiety about the destitute poor in Manchester, on 3 February 1838, a refuge for the destitute (called the Night Asylum) was established by volunteers. Among the users of this public charity, about 10% were children.[16] In September 1846, the Manchester juvenile refuge and school of industry, the predecessor of the Manchester Certified Industrial Schools, was established by volunteers. In the early years of the school, the institution's patron was the Lord Bishop of Manchester, and the vice-patrons were the first Earl of Ellesmere, Viscount Lord Mahon, the Dean of Manchester, the Mayor of Manchester, and Colonel Olowes.[17] In other words, both secular and religious leaders in Manchester supported this institution for the public interest.

Indeed, because the Lord Bishop and Dean of Manchester (Church of England) were supporters from the start, it seems likely that the Church of England would have had a strong influence. However, a minister and members of the trustees of the Cross Street Chapel (Unitarian) served as school committee members. Both Anglicans and dissenters supported this charitable activity. The situation was the same for political parties. As stated above, one of the patrons of the industrial schools after they were first established in 1846 was the mayor. The first mayor (Sir Elkanah Armitage, in office from 1846–48) and second mayor

13 Eric J. Hewitt, *Protest and Crime in Manchester's Industrial Revolution: Capital of Discontent*, Stroud: The History Press, 2014, 6.

14 Joyce M. Eliis, *The Georgian Town 1860-1840*, Houndmills: Palgrave, 2001, 148-149.

15 Leon Faucher, *Manchester in 1844: Its Present Condition and Future Prospects*, London and Manchester, 1844 (new impression by Frank Cass and Company Limited in 1969), 38, 63, 147, 148.

16 *Ibid*., 37-38.

17 The 3rd *Annual Report of the Manchester Ragged and Industrial Schools*, Manchester 1849, 5, Manchester Archives, Manchester Central Library, RfNo. GB127. M369/1/4.

(Sir John Potter, 1848–51) who supported the school were Liberals, and the third mayor was Sir Robert Barns (1851–53), a Tory, who later contributed £12,000 to establish the Barns' Home branch of the school. Sir R. Barns was one of the first Tory mayors of Manchester, a leading cotton manufacturer, charity leader, and outstanding example of a social leader in Manchester. In late nineteenth-century Manchester, the apparent domination by the Liberal elite came to an end and there was a mix of Tories and Liberals in the local political structure; as Peter Sharply pointed out, 'the Liberals were still dominant, but consensus was not based on a single canon of accepted political doctrine. Tory had to concede Liberal hegemony.'[18] He also emphasized that 'this apparent lack of competition, however, also reflected the emergence of a new consensus-based power structure from the mid-nineteenth century.'[19] In particular, involvement in local charities such as those supporting poor children cut across sectarian and political boundaries in late nineteenth-century Manchester.

Evidence that donors considered supporting the Manchester Juvenile Refuge and School of Industry a movement for the education and welfare of the poor can be found in the 12th annual report of the Manchester Ragged and Industrial Schools, Ardwick Green, Manchester (1858), a successor of the Manchester Juvenile Refuge and School of Industry:

> In the history of this country, the present age will occupy a prominent position, for the many benevolent movements that are being made to promote the education, and the general welfare of the lower classes of society. The development of the Sunday School system and Mechanics Institutions; the establishment of Free Libraries, Public Baths, Public Parks, Ragged and Reformatory Schools; and many other similar benevolent institutions, form the characteristics of the present generation. ... Schools, for the education and reformation of these neglected or degraded children of misfortune, are being established in every corner of the land, all attended with more or less success. The institution whose interests we are met to promote, claims the honor of being the first of the kind established in this district; eleven years ago it was a doubtful experiment; now it is a permanent and prosperous institution, and from year to year becoming more and more an honor and blessing to the neighborhood.[20]

In 1853, as stated above, the name of the school was changed to the Manchester Ragged and Industrial School, and it received government grants beginning in 1856 as a ragged school. Starting in 1851, only 1% of ragged schools could get government grants, as the elementary schools were concerned not with food and clothing but with vocational training.[21] In the twelfth annual report (1858), the managers claimed that 'it was not sufficient to enable Ragged Schools to carry out the object of their institution' because of reduced grants.[22] In 1859, the Manchester Ragged and Industrial School decided to seek

18 Peter Shapely, *Charity and Power in Victorian Manchester*, Manchester: The Chetham Society, 2000, 98.
19 *Ibid*., 95.
20 *The 12th Annual Report,* 1858, 5.
21 *Report from the Select Committee on the Education of Destitute Children; together with the Proceedings of the Committee, Minutes of Evidence, and Appendix*, 1861, 66, 85-87, 232-4, UK official reports on education, Yoshodo, Kyoto University of Education.
22 *The 12th Annual Report,* 1858, 17.

certification from the Committee of Privy Council on Education because of the reduction of the government's annual grant from £470 in 1858 to £142 in 1859. The 1859 report indicated that the school was certified and that 'the committee, anxious to carry out, as far as it is possible, the benevolent wishes of the subscribers and friends of the institution, have taken advantage of a recent measure of the legislature, entitled 'The Industrial School Act'. The supporters also insisted that, in addition to provision for cases sent by magistrates under the act, they maintained the accommodation for voluntary cases because they were 'desirous of preserving the original character of the institution, as a Ragged and Industrial School.'[23] It was not unusual for industrial schools to seek the approval conveyed by the state certification to obtain funds to manage the school. The situation was the same in the case of the Manchester and Salford Reformatory for Juvenile Criminals.[24]

In 1861, as stated above, the Secretary of State took over the Committee of the Privy Council on Education and was given the power to mandate examinations and reports on industrial schools and to grant and withdraw certificates for the purposes of the Industrial School Act. Five years later, the consolidated England and Scotland Act was established as the Industrial School Act (1866). The roles of government were not changed: the certification of each industrial school, giving government grants to the certified industrial schools, and ordering withdrawal if the Secretary of State was dissatisfied with the condition of the school based on the report of the inspector of industrial schools. In Sections 14 to 17, this act stipulated the classes of children to be sent to the certified industrial schools in greater detail compared with the previous act. Section 14 concerned children, apparently under age fourteen, (1) found begging or receiving alms (whether actually or under the pretext of selling or offering anything for sale) or being in any street or public place for the purpose of so begging or receiving alms; (2) found wandering and having no home or settled place of abode, proper guardianship, or visible means of subsistence; (3) found destitute, either being an orphan or having a surviving parent who was undergoing penal servitude or imprisonment; or (4) found in the company of reputed thieves. Section 15 prescribed that a child (5) apparently under age twelve who was charged with an offence punishable by imprisonment or a lesser punishment but has not been convicted of a felony in England or in Scotland sentenced to imprisonment for any term exceeding thirty days, with the approval of the justice or magistrate (with consideration for the child's age and the circumstances of the case), was to be dealt with under this act. According to Section 16, a child (6) apparently under age fourteen was sent to a certified industrial school when the parent, step-parent, or guardian of the child desired the child to be sent to the school because he was unable to control the child and if the justice or magistrate was satisfied on inquiry that it was expedient to deal with the child under the act. In addition, Section 17 described (7) refractory children apparently under age fourteen in workhouses, pauper schools, district schools, or

23 *The 13th Annual Report*, 1859, 7.

24 Sandra Jolly, 'The Origins of the Manchester and Salford Reformatory for Juvenile Criminals 1853-1860', *Manchester Regional History Review*, 15, 2001, 2-8.

poorhouses.[25]

As a result, after 1867, the government grant for Manchester was greatly increased (Table 3). The Home Office did not have the power to decide which children should be sent to the certified industrial schools. This power was given by the act to the justice or magistrate of each locality. Therefore, the Home Office could not control the sum of the grants without withdrawing schools' certificates.

In the 1870s, the school established two branches; it could accommodate around 100 children at first and expanded to accommodate 600 in the 1890s. In 1871, the Barns' Home school for boys was established by the private funding of Sir Robert Barns and a public grant from the Manchester City Council because, 'during the year 1868, the demand for admission of committed cases became so great.'[26] The main school was called Ardwick Green after that and continued to accept both boys and girls. In 1874, the name of the Manchester Ragged and Certified Industrial Schools was changed to the Manchester Certified Industrial Schools, and a branch for girls was established in Sale in 1877. After the Sale branch was opened, Ardwick Green accepted only boys[27].

The establishment of the Sale branch had to be taken in the context of increased deep concerns about girls' prostitution. As A. Brown and D. Barrett stated, 'the starting point for any historical consideration of child prostitution during the twentieth century must be the late nineteenth century when the subject of the commercial sexual exploitation of children first attracted widespread official, media and public attention.'[28] From the beginning of the Manchester Juvenile Refuge and School of Industry, the school accepted both boys and girls, but the number of girls who entered the school was only half the number of boys. In the reports from 1847 to 1855, there is no information on the distinction of the sex of the children. Of course, because the children were treated differently according to sex, the managers were conscious of the sex of each child, but the distinction was probably not important to them. However, after 1856, the distinction of sex was recorded in the annual report. According to the 1856 annual report, the number of girls enrolled from 1 September 1846 to 31 August 1855 was 310 and the number of boys was 621.[29] A shortage of accommodations for children was repeatedly reported, and the difficulties of handling boys and girls in the same accommodations were noted as a serious problem.[30] Gradually, the need for accommodations for girls was increasingly recognized among the officers of the schools. Outside of the schools, the term 'white slave', which referred to young white women and children who suffered sexual exploitation, was in common usage by the 1870s. The people realized that girls' prostitution was different from the problem involving adult

25 Industrial School Act, 1866 (29 and 30 Victoria, cc. 117 and 118, ss. 14-17).
26 *The 25th Annual Report*, 1871, 9.
27 *The 31st Annual Report*, 1877, 7.
28 Alyson Brown and David Barrett, *Knowledge of Evil: Child Prostitution and Child Sexual Abuse in Twentieth Century England*, Devon: Willan Publishing, 2002, 13.
29 *The 10th Annual Report*, 1856, 9, 11.
30 *The 31st Annual Report*, 1877, 7, 22.

women because of the age of consent.[31] The General Committee of the school decided to establish a branch for girls. Three years later, the amended Industrial School Act (1880) added to the classes of children to be detained in certified industrial schools new reasons, namely frequenting the company of reputed prostitutes and lodging or residing in a house frequented by prostitutes for the purpose of prostitution.[32]

Under the rules and regulations of the Manchester Certified Industrial Schools, 'the object of the institution shall be the reception and training of Protestant children of all denominations, who through parental neglect, or from any other cause may be left destitute or homeless, and in danger of contamination with vice and crime, such children being committed by magistrates.' Thus, 'no child shall be admitted unless certified by the Medical Officer to be fit for industrial training.'[33]

The Industrial Act (1866) provided the definition of the industrial school as follows: 'a school in which industrial training is provided, and in which children are lodged, clothed, and fed, as well as taught, shall exclusively be deemed an industrial school within the meaning of this Act.' In section 25, religious instruction was prescribed such that 'a minister of religious persuasion may visit the child at school' on fixed days and times by regulations 'for [the] purpose of instructing him in religion, and the child shall be allowed to attend a place of worship of that religious persuasion at least once on each Sunday, under the care of a person appointed or approved by the managers of the school.' Under Section 26, lodging, clothing, and feeding were left to the managers' discretion. The contents of industrial training and teaching were not stipulated clearly and were also entrusted to the managers.[34]

In the case of the Manchester Certified Industrial Schools, it was mandated that the children were taught in reading, spelling, writing, and ciphering and received religious and industrial education.[35] The children were also required to apprentice in skills such as printing, shoemaking, tailoring, bag-making, or wood-splitting; this was called industrial training, and the students were expected to acquire practical work skills and industrial habits. The schools employed master shoemakers, tailors, printers, bakers, and gardeners. The industrial occupations and number of children in each school are listed in Table 1.

31 Brown and Barrett, *Knowledge of Evil*, 15.

32 Industrial School Act, 1880 (43 and 44 Victoria, c. 5).

33 'Bye-laws for the management of the Manchester Certified Industrial Schools, Ardwick Green, Barnes' Home, and Sale' in *The 43rd Annual Report*, 1889, 70-74.

34 Industrial School Act of 1866 (29 and 30 Victoria, cc.117 and 118, ss. 14-17).

35 'Home Office rules and regulations of the Manchester Certified Industrial Schools, Ardwick Green, Barnes' Home, and Sale', examined August 24th, 1871 in *The 43rd Annual Report*, 1889, 66-69.

Table 1. Industrial occupations and the number of children in each school in 1878

Occupations	Ardwick Green	Barns' Home
Tailors	14	36
Shoemakers	17	36
Printers	10	
Box Makers	10	
Mill Boys		44
Bakers and Cooks	13	14
Knitters and Darners	25	26
Canvas Bag Makers	10	
Wood Choppers	46	
Engine Boys	4	
Boiler House		2
Mechanic's Shop		2
House Boys	8	12
Message Boys		1
Laundry Boys	10	10
Cleaners	28	30
Farmers		20
Outside Working*		36
At School All Day	21	
Monitor (Pupil Teacher)		1
Total	216	270

* The main occupation was gardening.

* The girls included 33 students in Sale, divided into two sections, which alternately attended school and engaged in work. They were employed in the laundry and in cooking, housework, sewing, and knitting.

Source: *The 32nd Annual Report of the Manchester Industrial School,* Ardwick Green, 1878, p. 13, 18, 23, Manchester Archives, Manchester Central Library (RfNo. GB127. M369/1/4).

It was very rare for the regulations of the elementary schools maintained by government grants to mandate the provision of instruction and training in specific occupations. At such schools, it was thought that special trades should not be carried out during school days because the object of elementary education in schools for general working-class children was 'to give such instruction to the scholar in general as will best fit them to fulfil the ordinary duties of life,'[36] and the children in elementary school (many children left school at eleven or twelve years of age[37]) were too young to profit much from manual work. One inspector testified, 'I have ascertained by the industrial schools, how difficult it is for children of eleven or twelve years of age to acquire the use of tools', and 'if they were thirteen or

36 *The Final Report of the Royal Commission Appointed to Inquire into the Working of the Elementary Education Acts,* England and Wales, London 1888, 148.

37 'Population of School Age; Age of Scholars; and Proficiency of Scholars Examined; 1881-82, 1882-83, 83-84, 84-85, 85-86, 86-87, 87-88, 88-89, 89-90, 90-91', *Reports of the Committee of Council on Education, England and Wales, with Appendix, 1881-82, 82-83, 83-84, 84-85, 85-86, 86-87, 87-88, 88-89, 89-90, 90-91*, 19c & 20c House of Commons Parliamentary Papers, Hiroshima University Central Library, 87.255-263, 88.177-185, 89.192-200, 90.188-196, 91.181-188, 92.169-176, 93.220-227, 94.297-304, 95.205-212, 96.209-216, 97.212-224.

fourteen, I could understand the manual labour being very useful.'[38] In general, manual labour instruction and training for working-class children were the responsibility of their parents or masters. However, the children sent to industrial schools were neglected by their parents, so training for these children was the responsibility of the public under the law. Consequently, industrial training for these children was exercised not only by the volunteer sector at both the national and local levels but also by the state and local authorities.

2. The Organization and its Activities for the Manchester Certified Industrial Schools

From 1846 to 1854, the president of the Manchester Certified Industrial Schools was an ex-mayor or rich private citizen of Manchester, but after 1855, the Mayor of Manchester took over the post. After 1875, the Mayor of Manchester and the Mayor of Salford served as joint presidents. As Figure 1 demonstrates, many officers were involved in the management of the schools. The General Committee, comprising around thirty honorary members, was elected at each annual meeting from among the subscribers and donors of not less than £10 6*s*. per annum. The General Committee elected a treasurer, secretaries, and the Executive Committee, consisting of a treasurer, secretaries, and no fewer than twelve other members. The General Committee also appointed a collector, auditors, a banker, medical officers, governors, and other school officers. The Executive Committee elected a House Committee for each school. The Executive Committee and House Committee ran the schools; the former committee met four or five times a year and the latter was established in each school to resolve daily problems. The management of education and training was entrusted to the governor and schoolmaster, while the schoolmaster and matron looked after the children's lodging. Medical care and support were provided by surgeons/physicians and dentists. The Ladies' Committee, consisting of almost thirty women, organized Ladies Associations to collect contributions from each district. This source of income became important, as Table 3 shows.

Her Majesty's Inspectors of Industrial Schools submitted the results of annual inspections to the Secretary of State and to the managers of each school. According to the 1879 annual report, H. M. Assistant Inspector of Industrial Schools Henry Rogers, Esq., made the entry in the Visitor's Book of Ardwick Green on 29 May 1879. Sir Henry Rogers came to inspect the school for the first time in five years, replacing Her Majesty's Inspector Major W. Inglis:

> After an interval of five years I have again pleasure of visiting the institution. I am very glad to find that the school is flourishing and going on well in all respects. My visit affords me great satisfaction. I notice improvement in every department. The arrangements are as perfect as the premises will permit, and, although still further

38 *The Final Report of the Royal Commission*, 152.

> improvement is practicable. I must admit that there is an aspect efficiency and useful adaption about the place which is highly gratifying to observe. The boys seem to be going on well. In my presence to-day I have seen nothing but good behaviour and orderly conduct. The school-room is well organized. The result are very uniform, and do credit to the ability and perseverance of the masters in charge. In the Workshops, the boys were diligently employed and were carrying on their work with cheerfulness and good order. I think that the present condition of the home is very encouraging. The generality of the boys looked healthy and well cared for.[39]

The managers and supporters probably felt relieved after reading this part of the report. Sir Henry Rogers also inspected Barns' Home on the previous day and left a good evaluation.[40] HMI Major W. Inglis inspected the branch for girls in Sale. His evaluation of the condition of the Sale branch was good, too.[41]

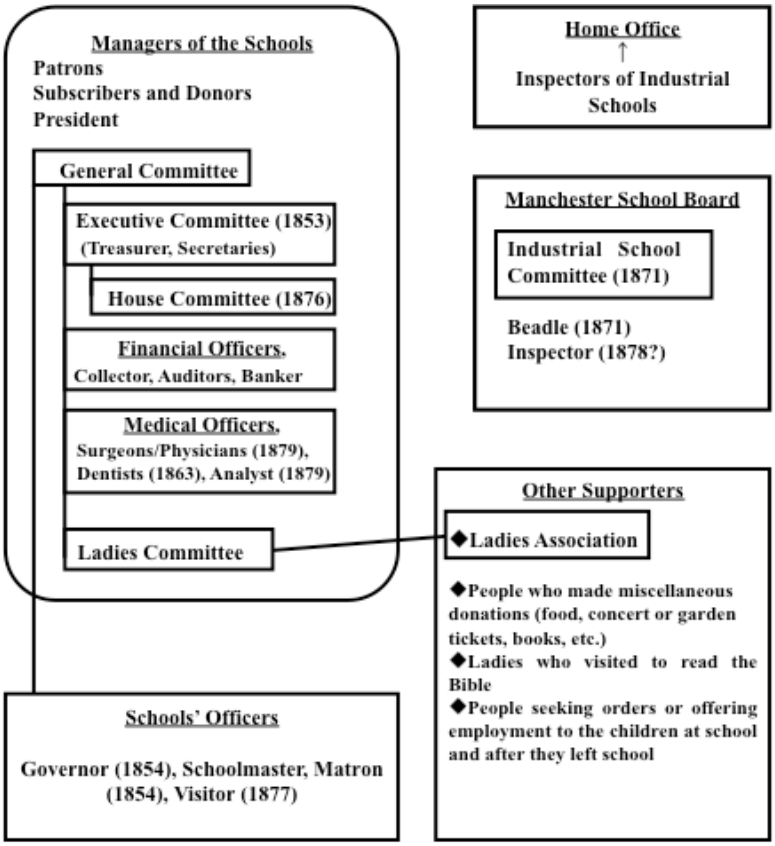


Figure 1. Organization of the Manchester Certified Industrial School

39 *The 33th Annual Report*, 1879, 13-14.
40 *The 33th Annual Report*, 1879, 20.
41 Ibid., 30.

Each school was also required to submit an annual report on the condition of each child to the Home Office, including the name, age, content of education and industrial training, results of examinations on the 3Rs by inspectors, health condition, remarks on conduct, and place of employment.[42] The most noteworthy information concerned employment after school. The school had to submit the conditions of the children's workplaces until they were nineteen years old, so the Manchester Certified Industrial Schools created the position of 'visitor' in 1877.[43]

Before the Manchester Certified Industrial Schools came under the Home Office's jurisdiction, the school asked the children's employers about their condition at work after leaving school because the condition of the children as workers was the greatest concern for school managers. According to the 1859 report, one employer in Salford stated in a letter to the school 'that the moral conduct and general behaviour of S.F. has been all that we could wish for in a boy of his years. He is a civil, willing and industrious lad.' Another employer at Oxford Road Mill said in a letter 'that the three children you enquire after work in this factory, and their overlooker reports their conduct to have been unexceptionable.'[44] The point of the evaluation was to assess the children's morals and industriousness as workers. In the 1863 annual report, the committee stated that they were pleased with the fact that their 'schools were truly Industrial Schools', and that they 'were giving industrial habits to [their] pupils' and 'the children were taught to love work.'[45] It is important to note that they insisted that the moral reformation and acquisition of industriousness occurred through their industrial education, not their moral education.

Under the Home Office, school officers carried out more detailed investigations and became convinced of the effect of industrial education in the schools. In the Barns' Home annual report of 1876, the schoolmaster reported the method of investigation as follows:

> The supervision of discharged boys has been efficiently maintained and a communication as far as possible has been kept up between them and the schools. A system of monthly reports has greatly assisted me in doing this. It is managed by a printed report form being issued from the schools on the twelfth of each month, which the boy must get filled up by his employer or some respectable person, and which is returned on the fifteenth. This has had a most beneficial effect, which is proved by not more than a dozen bad reports having been received during the year. The difficulty I had in instituting these certificates has been overcome, as boys who are doing well are now quite anxious to send them, to show they are conducting themselves properly. Non-compliance with the rule is suspicions, and a visit is immediately made which checks any carelessness in the beginning.[46]

The results of the visitors' investigations were satisfactory to the officers of the Manchester

42 Schedule A in the 'Proceedings of the Industrial School Committee', 15 September, 1871, 162-163, *Minutes of Miscellaneous Committees of the Manchester School Board*, Manchester Archives, Manchester Central Library (RfNo. GB127. M65/1/8/5).

43 *The 29th Annual Report*, 1875, 12.

44 *The 13th Annual Report*, 1859, 13.

45 *The 17th Annual Report*, 1863, 5.

46 *The 30th Annual Report*, 1876, 16.

Certified Industrial Schools. Of the 180 children discharged from Barns' Home from its opening in 1871 to 1876, 165 (92%) were reportedly 'doing well,' eight died, one was sent to a reformatory, and only six were convicted (Figure 2). The meaning of 'doing well' is unclear, and the Reports made no mention of the standard for this assessment, so it cannot be asserted that the industrial education at the Manchester Certified Industrial Schools was successful. However, I think it is reasonable to state that the officers regarded it as successful, as they knew the children's whereabouts and that the children worked without trouble.

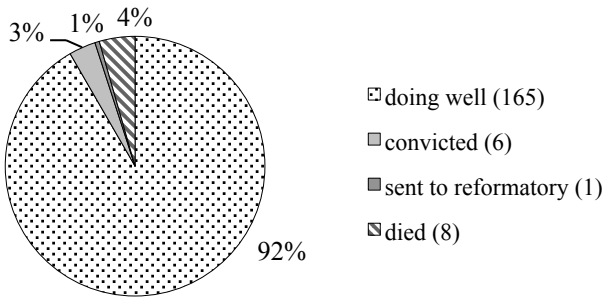


Figure 2. Discharged children from Barns' Home from 1871 to 1876 (180 children)
Source: *The 30th Annual Report of the Manchester Industrial School,* Ardwick Green, 1876, 16, Manchester Archives, Manchester Central Library (RfNo. GB127. M369/1/4).

Of the 180 children, seventy-one were discharged in 1876. I show the particulars of the children discharged from Barns' Home in 1876 in Table 2.

Table 2. Particulars of 71 children discharged from Barns' Home in 1876

Miners	10	Smiths	3	Painter	1
Farm Laborers	5	Bakers	2	Pork Butcher	1
Mill Hands	5	Carters	2	Tinplate Workers	1
Royal Navy	5	Dyers	2	Timber Yard	1
Army as Musicians	4	Tailors	2	Umbrella Maker	1
Pages	4	Grooms	2	Returned to Friends	2
Gardeners	4	Warehouse	2	Discharged by Disease	1
Shoemakers	4	Engraver	1	Died	2
Plumbers	3	Grocer	1		

Source: *The 30th Annual Report of the Manchester Industrial School,* Ardwick Green, 1876, p. 15, Manchester Archives, Manchester Central Library (RfNo. GB127. M369/1/4).

The method of investigation by visitors became stricter after the school hired Mr. Samuel Newton as a visitor. He investigated 250 children on average each year. For the first year after discharge, a monthly visit was paid to each person, followed by one every two months for the second year and one every three months for the third and last year. At least twenty-two visits were paid to each child from the date of discharge until he passed from

supervision by regulation of the Home Office.[47] The managers of the Manchester Certified Industrial Schools thought that the investigation by making a visit was very important for children to be working. They expected the children to be workers and to keep their jobs after leaving the school. It was indicated in the words of the governor of Barns' Home in an annual report that,

> Although this department [visiting discharged children] has been growing year by year in efficiency, I think more might be done by establishing, in town, a place to which all old boys might go when requiring work, advice, or assistance, and where they could meet the visitor at stated times. He should be instructed to advertise that employers can be supplied with boys on application to him. This would not only find work for those wanting it, but would cause more demand for boys directed from Schools.[48]

Under the Elementary Education Act of 1870, most urban areas of the country established school boards, which were the local authorities on education. The act did not make elementary education compulsory but gave school boards the power to do so. At the same time, the act gave school boards the power to establish, enlarge, and maintain industrial schools and school board inspectors to carry out their own inspections of the schools in addition to those conducted by the Home Office.[49] Therefore, the school board inspected and ordered the improvement of education and management at each industrial school in exchange for local grants to maintain the schools. The Manchester Certified Industrial Schools were inspected by the Manchester School Board inspector at least as early as 1878, except the Sale branch.[50] The school submitted the reports not only to the Home Office but also to the School Board. In other words, the Manchester School Board received reports from all industrial schools in Manchester, namely two schools and three training programs, in 1880.[51]

In late nineteenth-century Manchester, there were the Manchester Certified Industrial Schools for Protestant children and the St. Joseph School for Catholic children, which was established in 1871. The St Joseph School had separate schools for boys and girls. There were not only Protestant children but also Catholic children among the vagrant children in Manchester. However, the Manchester Certified Industrial School was open to only Protestant children.[52] In fact, of 440 children who entered the Manchester Certified Industrial School from 1866 to 1871, before the St. Joseph School was established, most were Protestant; only four children were Catholic.[53] The reason for these four children's admission was unclear. However, in view of the fact that at least 230 Catholic children from

47 *The 41st Annual Report*, 1887, 33.
48 *The 39th Annual Report*, 1885, 31.
49 Elementary Education Act, 1879 (33 and 34 Victoria, c. 75).
50 *The 32th Annual Report*, 1878, 14, 20.
51 'Proceedings of the Industrial School Committee', 26 August 1880, 9-16.
52 'Bye-laws for the management of the Manchester Certified Industrial Schools', 70-74.
53 *Admission Register 8 June 1866-31 July 1871 of Manchester Industrial School, Ardwick Green*, in Manchester Public Record Office (RfNo. GB127.M369/2/2/2).

Manchester attended industrial schools in 1880, it is likely that more than four Catholic vagrant children were found in Manchester at that time.[54] In Manchester, the demand for an industrial school for Catholic children was increasing; as such, sixteen students entered as soon as the St. Joseph School for boys opened.[55] The School Board gave a grant to the St. Joseph Schools from the start. That is, the Manchester School Board supported the education and care of both Protestant and Catholic children.

The Manchester School Board received the reports of the Manchester Certified Industrial Schools and the St. Joseph School, as mentioned above. The zealous visits of Manchester Certified Industrial School personnel to children's workplaces were rated very highly by the Industrial Schools Committee of the Manchester School Board. In 1880, the board compared the rate of children 'doing well' after attending the Manchester Certified Industrial Schools (83%) with that of the St. Joseph School (67%) and criticized St. Joseph's officer because of the numerous children lost to view by St. Joseph's in the fourth year. The board praised the painstaking visits of Manchester Certified Industrial School officials and ordered the St. Joseph School to improve on this point.[56]

3. Financing and Support Networks for Vagrant and Destitute Children

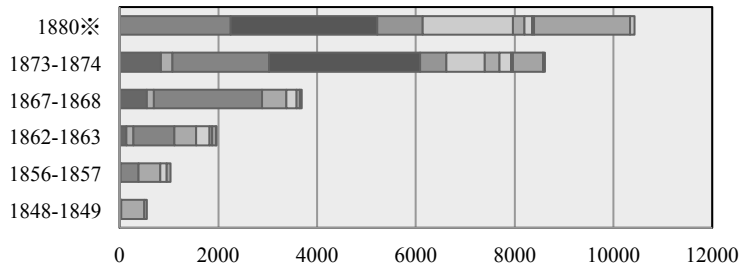
As Table 3 shows, funding was managed mainly by volunteers in the early years of the school (£462, 83% of the total income from 1848 to 1849). However, the school received government grants beginning in 1856 as a ragged school; the ratio of the government grants to the school's total income from 1856 to 1857 was not large, at 35%.

In the 1860s, the government grant was gradually increased; it was £975 (the number of children was 150, of whom one-third were outmates) in 1865, £1,244 (of 222 children, one-fourth were outmates) in 1867, £2,566 (228 children, all inmates) in 1869, and £2,549 (216 children, all inmates) in 1871.

After 1872, Ardwick Green (for boys and girls) and Barns' Home (for boys) received separate grants from the government and School Board. The sum of the government grant (58%) was very large compared with those of the School Board (15%) from 1 September 1873 to 1 September 1874; in 1880, the rates were 50% and 26%, respectively (Table 3). On the one hand, the public grant was increased rapidly, but on the other hand, the amount of charitable contributions decreased. As the schools were funded and maintained by local taxation, people who had donated to the schools questioned why they should pay twice to educate the children of the poor.[57] However, after local authorities began to issue grants to these schools, activities seeking voluntary contributions were continued. We can probably understand this in the context of the culture of the urban elite. They held public support for

54 'Proceedings of the Industrial School Committee', 26 August 1880, 37.
55 'Proceedings of the Industrial School Committee', 19 July 1871, 105.
56 Ibid., 5-8.
57 Prahms, *Newcastle Ragged and Industrial School*, 16.

charity as an important aspect of social life. They donated money for the public interest as an obligation of the urban elite and as participation in urban social life at the same time.[58] In the case of Manchester, women were the most important and active collectors. They used their network to seek these voluntary contributions and organized the Ladies Association, comprising around 600 women.[59]



	1848-1849	1856-1857	1862-1863	1867-1868	1873-1874	1880※
to Balance	36	16	133	549	842	0
to Interest (Endowment and Bank)	1	9	143	148	230	5
to Government Grant (Ardwick Green)	0	359	834	2,187	1,956	2,250
to Government Grant (Barns' Home)	0	0	0	0	3,052	2,967
to Grant from School Board (Ardwick Green)	0	0	0	0	540	915
to Grant from School Board (Barns' Home)	0	0	0	0	778	1,825
to Subscriptions and Donations	462	440	435	489	295	231
to Ladies Association	0	137	284	208	230	158
to Payment from Children's Parents or Friends	0	0	43	74	44	36
Wages and Profit on Work Done by the Children	53	68	79	40	607	1,943
to the Others	0	0	2	0	40	95

Table 3. The change in the category and the amount of income (£) from 1 September to 1 September 1848–1849, 1856–1857, 1862–1863, 1867–1868, and 1873–1874 and from 1 January to 31 December 1880.

* After 1875, the term of the account was changed from 1 January to 31 December.

Source: Annual Reports of Manchester Industrial School, Ardwick Green, 1849, 1857, 1863, 1868, 1874, Manchester Archives, Manchester Central Library (RfNo. GB127. M369/1/4/1-4).

58 Ellis, *The Georgian Town*; Rosemary Sweet, *The English Town 1680-1840: Government, Society and Culture*, Essex: Pearson Education Limited, 1999; Shusaku Kanazawa, *Charitei to Igirisu Kindai* [*Charity and Modern Britain*], Kyoto: Kyoto University Press, 2008; F.K. Prohchaska, *Women and Philanthropy in 19th Century England*, Oxford: Oxford University Press 1980.

59 The list of the members of the Ladies Association in *the 7th to 34th Annual Report*, 1853 to 1880.

Table 4. Categories of treatment of vagrant children found by the beadle during the six weeks ending 25 August 1880

No.	Category of Treatment	Number of Boys	Number of Girls	Total
1	Cases on hand and in progress	7	4	11
2	Cases inquired into and reported			
	a. Restored to their homes	1	1	2
	b. Parents warned	12	9	21
	c. To be further watched	5	3	8
3	Cases brought before magistrates			
	a. Remanded and still under remand	4	0	4
	b. Warned and restored to parents	12	0	12
	c. Sent to industrial school	3	6	9
4	Cases otherwise disposed of			
	a. Sent to the workhouse in Swinton	1	1	2
	b. Reported to Bradford School Board	1	0	1
	c. Reported to Officer, Newton Head	1	0	1
	d. Induced to attend school regularly	4	3	7
	Total	51	27	78

Source: 'Proceedings of the Industrial School Committee', 26 August 1880, 1-2, *Minutes of Miscellaneous Committees of Manchester School Board*, Manchester Archives, Manchester Central Library (RfNo. GB127. M65/1/8/5).

As a result of the rise in the relative importance of the government grants, the Manchester Certified Industrial Schools had to accept children sentenced by magistrates instead of voluntary enrolments. However, the treatment of young offenders and vagrant children was one of the most serious problems in Manchester; therefore, enrolling sentenced children was not contrary to their mission. In addition, the grants from school boards were gradually increased, and the Manchester School Board had more influence on the managers of the Manchester Certified Industrial Schools than the Home Office, which inspected it only once a year. The Industrial Schools Committee of the Manchester School Board invited the governor and secretary to their meetings several times to hear directly about ideas for or the condition of the school and conducted detailed inspections.[60]

While the government legislated the creation of industrial schools and reformatories for the treatment of vagrant, neglected, and destitute children and young offenders, only some of these children were sent to industrial schools. The school boards tried to find a solution for the treatment of vagrant children. A sentence of enrolment in an industrial school was one way of dealing with these children. In 1871, James B. Power, as the beadle, an officer of the board, was employed from the hours of nine am to twelve pm and six pm to eleven pm to find and inquire about vagrant children on the streets in Manchester. In addition to the work of patrolling the streets, the beadle was instructed to obtain in every case the full particulars as to the circumstances of the parents or guardians of every child committed to the industrial schools by the board.[61] Before the beadle was hired by the Manchester School Board, a

60 'Proceedings of the Industrial School Committee', 28 June 1871, 92-97.

61 'Proceedings of the Industrial School Committee', 26 August 1871, 141.

charitable person or policeman who found a vagrant child made contact with the school officers. Table 4 shows the categories of treatment of vagrant children found by the beadle.

When the beadle found vagrant children, he inquired closely regarding the condition of the family budgeting and the treatment of the child in the home, and then he decided on the reaction to the family and child. He classified them into three categories of treatment: (1) direct reaction (returned children to their homes, warned parents, or kept watch), (2) appearance before a magistrate, and (3) other. Most frequently, the parents were warned. Magistrates often decided to warn parents not to send the children to a certified industrial school. For the beadle, it was very important to know the situation of the family of vagrant children because many vagrant children had a mother or father or both. Indeed, most children of the Manchester Certified Industrial Schools had a parent. 49% of the 5,563 children who entered the school from September 1746 to December 1894 had parents, 32% had only a mother, 14% had only a father, and 5% were orphans.[62]

J. B. Power reported on the family of a child at the Manchester Certified Industrial Schools who had an insurmountable difficulty as follows:

> The case where the heaviest burden seems to fall is that of Thomas Batters by whose weekly earnings appear to be 10*s*. per week, out of which five persons have to supported and 2*s*. 8*d*. rent to be paid. The sum due to the Secretary State with police expenses already amounts to 15*s*. 6*d*. and increase at the rate of 1*s*. per week, the amount claimed. They are in very poor circumstances, and can neither pay the rent, nor the 15*s*. 6*d*. to the police. Their sad state chiefly arises from the delicate health of the mother.[63]

The Secretary of State claimed a weekly payment from a parent or step-parent 'if of sufficient ability' according to the act, but many parents could not afford to pay. The beadle had to judge whether the family could make a weekly payment or not.[64]

In addition to economic difficulties, the beadle often faced the difficulty of public interference with parental authority. Some parents disliked the visits and support from the beadle. On this point, Rev. J. F. Bryan, the governor of Ardwick Green, had the same impression. Rev. Bryan testified at the meeting of the Industrial School Committee that 'parents generally were very unwilling to give up their children, as they found them useful for begging purposes comparatively few of the children were deserted by their parents.'[65] It is likely that cases of cruelty were brought before magistrates, who then sent the children to an industrial school to separate them from the parents if the children were judged able to bear the industrial training.

The judgment on the ability to bear industrial training also was very important to enter the industrial schools. For example, one girl who was sent to the Manchester Certified Industrial Schools for begging by magistrates was 'subsequently discharged an account of

62 *The 3rd to 48th Annual Report*, 1846 to 1894.
63 'Proceedings of the Industrial School Committee', 26 August 1871, 157.
64 Ibid., 139.
65 'Proceedings of the Industrial School Committee', 28 June 1871, 94.

her having taken the smallpox whilst under remand.'[66] The beadle continued to watch this girl after annulment of the sentence to the industrial school. He confirmed and reported that she was at work at the meeting of the Industrial School Committee the following month.[67]

Other notable cases were reported to another school board. Children who lived in other towns were often found to be vagrants in Manchester. The school boards established and maintained close coordination with each other not only in finding vagrant children but also in sending them to industrial schools. On 26 August 1880, the number of children attending industrial schools at the Manchester School Board's cost was 624, 518 of whom were boys and 106 were girls. Regarding religion, there were 394 Protestant children and 230 Catholics. 364 of 624 children were admitted to the industrial schools in Manchester, and 260 were sent to other local industrial schools: Liverpool, Birmingham, York, and Glasgow.[68]

In contrast, the Manchester Certified Industrial Schools accepted children from various regions at each school board's cost. For example, in 1879, Ardwick Green received grants from the Manchester (£447), Salford (£175), London (£93), Leicester (£66), Norwich (£13), and Stalybridge (£2) school boards; Barns' Home received grants from the Manchester (£440), London (£962), Salford (£270), Oldham (£13), Nottingham (£9), Blackburn (£7), West Bromwich (£5), Leicester (£4), and Reading (£2) school boards; and Sale received grants from the Manchester (£223), Salford (£80), Leicester (£28), Bolton (£7), Liverpool (£6), and Derby (£4) school boards.[69]

In addition to the cost per head, the Manchester Certified Industrial Schools contracted to receive grants for the acceptance of a fixed number of children from other school boards. For example, a contract of the Manchester Certified Industrial Schools with the Salford School Board of 16 July 1881 stated that both agreed that Barns' Home would 'receive a grant of the sum of four hundred pounds from the school board of the district of the borough of Salford' in exchange for acceptance of the children 'not exceeding at any one time the number of eighty boys' as may be sent to Barns' Home 'by the magistrates acting for Salford.'[70]

The Manchester Certified Industrial Schools was not only way to treat vagrant children found on the streets by the beadle. The beadle and magistrates chose appropriate steps depending on the children's circumstances, namely having been returned home, parents warned, under observation, or induced to attend elementary school. They sometimes had to decide the children to send the industrial schools to separate them from the parents. Among the methods of dealing with vagrant children, sending them to an industrial school was a potentially effective way to send vagrant children into the local community. The Manchester Certified Industrial School tried to perform their duties to educate vagrant children and bring them up to be industrious workers. The main objective of the Manchester Certified Industrial

66 'Proceedings of the Industrial School Committee', 26 August 1871, 140.
67 'Proceedings of the Industrial School Committee', 15 September 1871, 155.
68 'Proceedings of the Industrial School Committee', 26 August 1880, 37.
69 *The 33rd Annual Report*, 1879, 19, 26, 32.
70 'Minutes of Executive Committee', between 14 July 1881 and 4 August 1881, Manchester Archives, Manchester Central Library (RfNo. GB127. M369/1/1/4).

Schools was not to raise vagrant and destitute children in a more favourable situation or to prevent the children from entering a career of crime but to send the children into society 'successfully' as workers. Moreover, they could not fulfil these duties without cooperating with other institutions and people. Support networks were indispensable to the management for the treatment and education of vagrant children.

Conclusion

In late nineteenth-century England, the state intervened in the education of vagrant children by enacting legislation, awarding grants, and conducting inspections. The government provided money and inspected the management of each industrial school. However, the power to make decisions was put into the hands of local people, including who should be sent to the industrial schools, how the children should be educated through industrial training, and how the children and their families were treated with respect to public responsibility. In the case of Manchester, local people tried to find vagrant children and collect information about the children and their families to decide on the treatment of vagrant children using the networks of the people of Manchester and other local authorities, cutting across religious, political, and regional boundaries. It is likely that everyone who was concerned about the education and treatment of vagrant children had their own reasons for supporting the management of the Manchester Certified Industrial Schools. Some took pity on poor children and families, while others considered this support a solution to a serious problem in the maintenance of public order, the responsibility of wealthy people, or participation in urban social life. Whatever they thought, there is no doubt that many women and men collected donations, placed orders for various products made by the children at the school, and offered employment to the children after they left school. Of course, it was very hard to manage. The beadle of the School Board and the officers of the school faced refusal of support and intervention from parents. The governors and schoolmasters experienced difficulty with the children. The officers of the school and the Committee of the School Board had to regulate and negotiate with other school boards or the Home Office and their inspectors. They served as a welfare complex to deal with the education of vagrant children.

The Human Resource Development, Occupational/Status-linked Personnel Management Practices and Engineers in Japanese Corporations before the Second World War

Hiroshi Ichihara*

Abstract. The purpose of this article is to analyse the characteristics of the Pre-WW II Japanese corporate management from the perspective of the human resource development. It has been believed that the essential framework of the Japanese-style human resource management before WW II constituted differentiated employment by a few ranks; then, different duties and treatments followed accordingly. The initial ranks were determined by the level i.e. social recognition and overall academic achievement of new employees' schools. Thus, the approach was called "an educational status system". Almost all researchers shared the following opinions. The graduates of either universities or polytechnics were hired as high-ranking employees with monthly payment, whilst the graduates of technical or commercial schools filled the posts of employee in semi-staff condition. Their wages were paid either monthly or daily. In the case of workmen with basic education at shop floors, the payment was only made daily. The gap of prestige and remuneration amongst the different ranks was distinctive.

This article points out a new fact that a couple of misapprehension exists there. The first misconception is that it was rather exceptional for a new employee with comparatively weak educational background to be promoted to a prestigious post despite his long commitment and contribution to his firm. The second is that any potential disaccord between the highly ranked and compensated group of university graduates and the lower with basic education was dealt with by the former alongside the unique Japanese code of group behaviour.

Yet, this article has demonstrated that the two standpoints seem invalid. The statements of the management and leading engineers of the period prove that the university graduates of engineering did not possess adequate knowledge for production operation. Besides, they did not show any preference to practices at shop floor and instead complained a lot about technical operations at workshops. The Japanese firms necessitated both university-educated engineers with theoretical knowledge and shop floor technicians with operational understanding, when they developed new products on the basis of imported western technologies. My research has investigated the Japanese human resource management of pre-war Japanese corporations, and it presents that the technicians were mostly the graduates of technical schools which were on a level with secondary education and, even in some cases, those with only elementary education. They were, at the beginning, hired as a junior group of workforce i.e. workmen or employee in semi-staff condition, however, got promoted later to the higher ranks in accordance with their commitment to work and internal training programmes, and consequent appraisals of their technical capability. "Educational status system" has been lacking the analysis of its actual situation and has been misunderstood to be a rigid system. However, the Japanese firms of the period required those human resources to improve technological capacity and to improve economic efficiency, and facilitated the development by providing them with incentives of promotion to prestigious posts. The aim of this article is to demonstrate these points.

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1. Introduction

The purpose of this article is to analyse the characteristics of the Pre-WW II Japanese corporate management from the perspective of the human resource development. It has been believed that the essential framework of the Japanese-style human resource management before WW II constituted differentiated employment by a few ranks; then, different duties and treatments followed accordingly. The initial ranks were determined by the level i.e. social recognition and overall academic achievement of new employees' schools. Thus, the approach was called "an educational status system". Almost all researchers shared the following opinions. The graduates of either universities or polytechnics were hired as high-ranking employees with monthly payment, whilst the graduates of technical or commercial schools filled the posts of employee in semi-staff condition. Their wages were paid either monthly or daily. In the case of workmen with basic education at shop floors, the payment was only made daily. The gap of prestige and remuneration amongst the different ranks was distinctive.[1]

A generally accepted view is that the origins of this HR system can be found in the characteristics of the method of selecting salaried bureaucrats. In 1868, the Tokugawa Shogunate, which had governed Japan until then, collapsed, to be replaced by the new Meiji government. Under the Tokugawa Shogunate, salaried bureaucrats had been chosen based on the social standing of their families of origin. As a result, the ranks of salaried bureaucrats were determined without regard to their ability. Although around the time of the start of rule by the new Meiji government there were increasing cases of salaried bureaucrats being appointed based not on the social standing of their families of origin but on assessment of their individual abilities, no standards had been established for objective assessment of their abilities. Aiming to appoint on a wide-scale basis as salaried bureaucrats persons judged competent based on standards of ability, the new Meiji government adopted in 1887 a system of selection of public officials based on examinations, modeled on the German bureaucracy and, perhaps, on the Chinese civil service examination system. While technically this meant that anybody who passed the examinations could become a salaried bureaucrats, in fact university graduates were granted the privilege of passing without taking the examination for senior salaried bureaucrats and graduates of secondary schools were granted the same privilege for junior salaried bureaucrats, so that graduates of higher education accounted for nearly all senior salaried bureaucrats while nearly all junior salaried bureaucrats were graduates of secondary schools.[2] As a result, educational background came to serve as barometers of ability. Behind this was the fact that unlike European universities Japanese universities had begun as institutions devoted to education and research on subjects directly related to the modernization of society and industry, such as law, economics, the physical sciences, engineering, and medicine, rather than classical education.

1 Ujihara Shojiro, *Nihon no Roshi-kankei* [*Industrial Relations in Japan*], Tokyo, 1968, 62-76.
2 Takeuchi Yo, *Risshi, Kugaku, Shusse* [*Aspiration, Self-supporting, and Success*], Tokyo, 1991, 52-56.

Educational background may have been a useful standard for selecting the public officials who would play roles in introducing Western systems of law and economics to Japan and running them properly. However, from an early stage doubts were expressed as to whether educational background was appropriate as standards for selection of high-ranking employees in private-sector companies.

However, this noticeable correlation between educational background and ex officio standing was developed within a group of large corporations from the beginning of the twentieth century. Afterwards, during the 1920s and 30s, it became common in large-scale firms. It has been agreed that, as a key element of corporate employment, the custom of periodically employing new graduates of universities and other educational institutions characterised the growth of the Japanese internal labour market.[3]

There has been a general viewpoint that this "educational status system" was abolished by the Japanese policy of democratisation after WW II; nonetheless, my study points out a new fact that a couple of misapprehension exists there. The first misconception is that it was rather exceptional for a new employee with comparatively weak educational background to be promoted to a prestigious post despite his long commitment and contribution to his firm.[4] The second is that any potential disaccord between the highly ranked and compensated group of university graduates and the lower with basic education was dealt with by the former alongside the unique Japanese code of group behaviour. Especially, the superior engineers with university education were known to take a serious view of operatives' works at shop floor more than assignments at laboratories; and this attitude was positively appraised in the past studies and discussed as a key success factor.[5]

Yet, this article has demonstrated that the two standpoints seem invalid. The statements of the management and leading engineers of the period prove that the university graduates of engineering did not possess adequate knowledge for production operation. Besides, they did not show any preference to practices at shop floor and instead complained a lot about technical operations at workshops. The Japanese firms necessitated both university-educated engineers with theoretical knowledge and shop floor technicians with operational understanding, when they developed new products on the basis of imported western technologies. My research[6] has investigated the Japanese human resource management of pre-war Japanese corporations, and it presents that the technicians were mostly the graduates of technical schools which were on a level with secondary education and, even in some cases,

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3 Sugayama Shinji, '1920-nendai Judenki Keiei no Kakyu Shokuinso [Employment Management of Junior Staff in Electrical Machinery Industry in the 1920's: A Case Study of Hitachi Ltd]', *Shakai-keizai Shigaku* [*Socio-Economic History*], vol. 53, no. 5, 1987, 661-696.

4 Ujihara, *op. cit*.

5 Morikawa Hidemasa, 'Nihon Gijutsusha no "Genba-Shugi" ni tsuite [The Origins of Genba (Job Site): Oriented Mind of the Modern Japanese Engineers]', *Yokohama Keiei Kenkyu* [*Yokohama Business Review*], vol. 18, no. 4, 1988, 295-306.

6 Ichihara Hiroshi, 'Jinji-kanri-Jinteki-shigen no Keisei to Mibun-Seido [Personnel Administration - Development of Human Resource and Educational Class System]', in Abe Takeshi and Nakamura Naofumi ed., *Koza Nihon Keiei-shi II: Sangyo Kakumei to Kigyo Keiei, 1882-1914 [Japanese Business History II: The Industrial Revolution and Business Management, 1882-1914*] Kyoto, 2010.

those with only elementary education. They were, at the beginning, hired as a junior group of workforce i.e. workmen or employee in semi-staff condition, however, got promoted later to the higher ranks in accordance with their commitment to work and internal training programmes, and consequent appraisals of their technical capability. "Educational status system" has been lacking the analysis of its actual situation and has been misunderstood to be a rigid system. However, the Japanese firms of the period required those human resources to improve technological capacity and to improve economic efficiency, and facilitated the development by providing them with incentives of promotion to prestigious posts. The aim of this article is to demonstrate these points.

2. Higher Technical Education and Appraisal of University-graduated Engineers

Throughout the historical context of adopting western industrial technologies, Japan experienced the early disintegration of apprentice system and the swift institutional development of technical educations even before the full-scale industrialisation. Henry Dyer, a graduate of Glasgow University, attempted to integrate theoretical educations and practical experiences, and this resulted in the establishment of a symbolic institution of engineering in 1873, Kobu Daigakko (Imperial college of engineering) , which was the precursor of the Engineering Department of Tokyo University. When Dyer established Kobu Daigakko, the most advanced engineering educational institutions in the world were France's *grandes écoles d'ingénieurs.* Germany also had established the *Technische Hochschulen,* modeled after these *grandes écoles.* These schools stressed courses on engineering theory more than practical technical education. In contrast, Britain, where the traditions of liberal education as epitomized by Oxford and Cambridge universities had considerable influence on higher education, was behind in the development of independent educational institutions on engineering. While a university in Scotland had begun to offer education in engineering, it too had a strong character of liberal education, and as a result industrial engineers were trained through a system of apprenticeship in the industrial workplace and were not educated on engineering theory.[7] Dyer intended the Kobu Daigakko to be an educational institution capable of training engineers who would have a command of both engineering theory and practical engineering skills, by fusing together these two types of industrial engineering education. As a result, the curriculum of Kobu Daigakko spent largely the same amount of time on practical training as on courses on engineering theory in the classroom.

7 Robert Fox and Annav Guagini, *Laboratories, Workshops and Sites: Concepts and Practices of Research in Industrial Europe 1800-1914*, University of California, Berkeley, 1999, 60, 95, 111-112, 116; Robert Fox and Annav Guagini, 'Britain in Perspective: The European Context of Industrial Training and Innovation, 1880-1914', *History and Technology*, vol. 2, 1985, 134-135, 138-140.

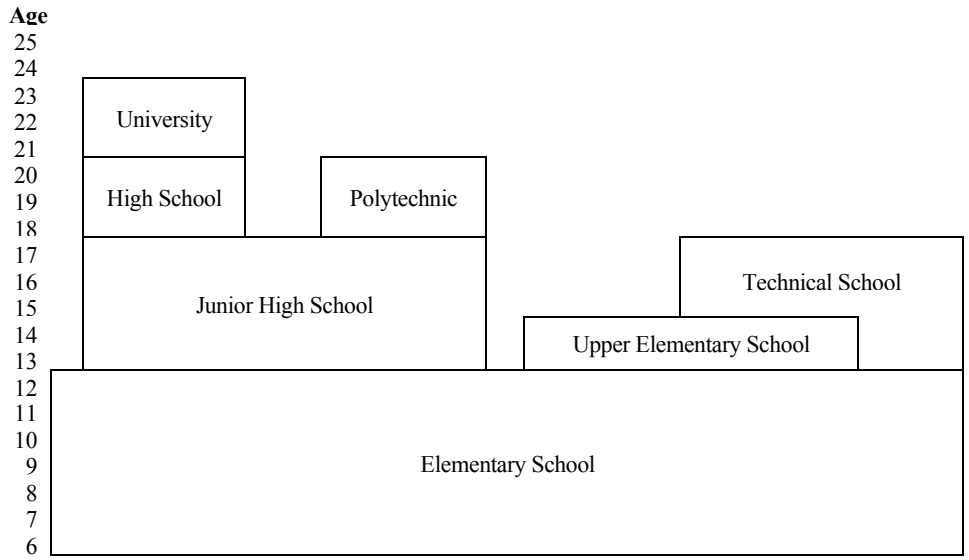

Figure 1. Educational System before the Second World War in Japan (in 1919)
Source: made based on The Ministry of Education, *Gakusei Hyakunen-shi* [*History of Educational System*], Tokyo, 1981.

Figure1 shows the educational system before the Second World War in Japan. Kobu Daigakko was merged with Tokyo University that attached greater importance to theoretical education than to practical experiences to be the Engineering Faculty of Imperial University (Tokyo University), which was the first university faculty of Engineering in Japan. The Faculty of Engineering was established at Kyoto University, founded in 1897 as the second university in Japan, and this was followed by other universities. Among the schools other than universities which conduct technical education, the institutions that played a key role are industrial polytechnics, technical schools and industrial workmen's schools which offer industry-related education. The industrial polytechnics have their roots in the Tokyo Workmen School, founded in 1881 to serve the purpose of fostering foremen. The Tokyo Workmen School, and the Osaka Technical School which was founded in 1896, developed into industrial polytechnics in 1901. Subsequently, industrial polytechnics were established throughout the country. The industrial polytechnics welcomed students who completed six years of compulsory primary school education and the five years of secondary education that followed, and offered three years of higher technical education. Although the education provided at the industrial polytechnics attached great importance to practice than a theory in comparison with the education of the university department of engineering, it was considered higher education pursuant to university education by the people at the time, and the graduates were hired as high-ranking employees. Technical schools sought students who graduated a six-year primary school and then received two years of advanced, consecutive junior education, and equipped them with lower-grade technical education. The education was acknowledged to be of the same level as that of junior high school. Industrial

workmen's schools were different from these two types of schools in nature. The industrial workmen's schools were the night schools primarily for workmen who received only primary school education. The students of the industrial workmen's schools would go to school after their daytime work, and university professors who were on part-time duty as teachers taught them elementary technical knowledge. The industrial workmen's school included a variety of schools, and fulfilled its role of supplementing the quantitative shortfall of industrial schools.

Dyer's ideology of the combined education of engineering theory and practical knowledge that distinguished the technical education in Kobe Daigakko and was succeeded to by the Engineering Faculty of Imperial University gained high reputation of "deserving international attention", and his approach was recognised to bring forth the university-educated Japanese engineers' common ethos of taking operations at shop floor seriously.[8]

Nevertheless, it is worth noting that a considerable number of managers, engineers, technician, and workmen brought up harsh criticism about the effectuality of the university-level technical education as well as the overall capability of university graduates. Oh'uchi Ai-Sichi, managing director of Mitsubishi Electric and an ex rear admiral of technology of the Japanese Imperial Navy, advised his men in 1938 that they should ease up on the "yet unprofessional" new recruits from universities and stop despising the "rookies of practical engineering at real workshops" since the university programmes were generally concerned more with highbrow engineering theories.[9] Ohkouchi Masatoshi, professor of engineering at Tokyo University and who was also an eminent guru of engineering of the time, was vexed by the fact that a noticeable majority of managers were dissatisfied with university graduates without comprehension of their potentials.[10] Their views of supporting university graduates, as a matter of fact, proved the growing public voice of censuring their inevitably underdeveloped competency in shop floor practices.

A few causes of the university graduates' insufficient practical knowledge and incapacity of directing workshop technicians and workmen were discussed: firstly, the drawback of university programmes was derived from the overstress upon note takings at lectures instead of development of the ability of thinking and reading; secondly, university students of engineering tended to dislike practical trainings; and furthermore, the content of the university programmes lacked technical trainings necessary for the actual operations at shop floors.[11] For example, Yasukawa Daigoro, the founder of Yasukawa Electric Corporation who had experience as a trainee at the American electric machinery company Westinghouse after graduating from the Department of Electrical Engineering in the School of Engineering of the University of Tokyo, was critical of university engineering education in Japan, arguing

8 Miyoshi Nobuhiro, *Nihon Kogyo Kyoiku Seiritsu-shi no Kenkyu* [*A Study on the History of the Formation of Industrial Education in Japan*], Tokyo, 1985; Morikawa, op. cit.

9 Oh'uchi Ai-Shichi, *Shokucho ni Nani wo Motomu-bekika* [*The Duties of Chargehand*], Nagoya, 1938.

10 Ohkouchi Masatoshi, 'Kogyo Kyoiku Siken (Personal View on Industrial Education)', *Toyo Gakugei Zasshi* [*Journal on Eastern Arts and Sciences*], vol. 31, no. 392, 1914, 218.

11 *Koseikai kousei* [*Journal of Koseikai*], no. 69, 1925, 33; Ohkouchi, op. cit., 216.

that students at Japanese universities simply kept notes of what lecturers dictated in class without understanding it. According to him, students taught through this method, known as note lecturing, were unaccustomed to thinking for themselves and had no practical work experience, so that they lacked the power needed to ensure that workmen would follow their orders thoroughly.[12] Kishi Keijiro, another graduate of the Department of Electrical Engineering of the University of Tokyo's School of Engineering who led technological development at Shibaura Engineering Works, a pioneer in Japan's electrical machinery industry, also lamented, "Unable to lead workmen, university graduates are led around by them instead."[13] That this weakness of university engineering education continued until after the Second World War can be seen in the fact that the postwar U.S. Engineering Education Mission to Japan recommended reforming methods of instruction in which students merely attempted to earn units by writing down as much as they could of the content of lectures and memorizing it.[14]

Concerning the sustainable technological development, Japanese corporations began to necessitate a new group of workforce that could fill the social and professional gap between "highbrow theoreticians" from universities and "practitioners" with relatively insufficient theoretical understandings. The Japanese firms then obtained the essential human resources from their own internal training programmes as well as personnel administration. The following section will examine the managerial endeavour in the shipbuilding, iron manufacturing and electric machinery sector, which led the noticeable growth of the Japanese heavy industry.

3. Internal Development of Human Resources and Professional Promotion

(1) The Naval Arsenal

The industry that employed human resources development using Western technological knowledge the earliest in Japan was shipbuilding. The French Navy engineer François Léonce Verny, invited to oversee the Yokosuka Iron Works established in 1865 by the Tokugawa Shogunate, proposed the start of technical education on shipbuilding. The iron works actually were a shipyard, which would become the precursor of the Yokosuka Naval Arsenal. Verny's educational plans called for establishing a school on the grounds of the iron works where young warriors (samurai) would be provided with specialized technical education based on the same curriculum used to train French naval engineers while the children of farmers from nearby Yokosuka would be taught in a manner similar to the training of foremen in the French navy, by combining work experience in the works with

12 Yasukawa Daigoro, 'Kyoshitsu wo Shitsugi-mondo no Dojo Tarashimeyo [Make the Classroom to be Training Hall for Questions and Answers]', *ibid.*, no. 69, 1925, 33-34.

13 Kishi Keijiro, 'Jissaika to Narutame no Kyoiku wo Nozomu [Hope Education to Make Practical Man]', *ibid.*, no. 69, 28-29.

14 Amerika Gasshukoku Kogyo Kyoiku Shisetsudan, *Tainichi Kogyo Kyoiku Komondan Hokokusho* [*The Report of US Advisory Mission on Industrial Education*], Tokyo, 1951.

academic learning centered on drafting. Before the school could produce any results, it was closed when the Tokugawa Shogunate collapsed. However, Verny's educational vision of training engineers and foremen was realized at the Yokosuka Naval Arsenal, established by the new Meiji government as the successor to the Yokosuka Iron Works.[15]

Yokosuka naval arsenal in its early phase of 1870 benchmarked a French model of technical school to set up its own, and commenced development of two kinds of human resources: superior technical staffs with education of professional apprehension of theories (similar to the French naval technical officers) and skilled chargehands at shop floors with basic theoretical education such as mathematics, geometry and drafting. In tandem with the founding of modern technical schools in Japan, only university graduates were recruited for the superior posts of engineering from 1882, and the corporate training programmes for professional engineers was abolished. The internal technical school then was transformed into an institution for educating workmen for workshop technicians (employee in semi-staff condition), and this system was in operation until 1907. Officials of the Yokosuka Naval Arsenal consisted mainly of higher-ranking officials appointed by the head with the approval of the Emperor and lower-ranking officials appointed solely under the authority of the head. Senior engineers were given the status of higher-ranking officials appointed with the approval of the Emperor, out of regard for the academic knowledge they obtained through school education. In contrast, from the time the Arsenal was established workers judged to demonstrate sufficient ability were eligible for promotion to junior engineers, who had the status of lower-ranking officials appointed by the head alone. As in-house schools progressed, the aim of their education came to be one of training highly capable workers to become junior engineers.[16]

At last, the corporate training programmes for workshop technicians became unnecessary in 1907 since the entire newcomers were recruited from engineering polytechnics.[17]

However, as can be seen from Table 1, based upon the curriculum vitae of newly recruited junior engineers (position of workshop technician), the new employment from the internal technical school still continued.

15 Sumiya Mikio ed., *Nihon Shokugyo Hatten-shi, Jo* [*The History of Vocational Training in Japan,* vol. 1], Tokyo, 1970, 11-16, 94-95.

16 Wakabayashi Yukio, 'Meiji-zenki Kaigunkosho ni okeru Rodosha Togogenri no Hensen [The Development of the Principles of Integration of Workers in Naval Arsenals in the Early Meiji Era]', *Hosei University, Oh'hara Shakai Mondai Kenkyujo Zasshi* [*The Journal of Oh'hara Institute for Social Research*], no. 360, 1988, 6-11.

17 Yokosuka Kaigun Kosho [Yokosuka Naval Arsenal], *Yokosuaka Kaigun Kosho Gijutsukan oyobi Shokko Kyoiku Enkaku-shi* [*The History of Education for Engineering Staff and Workmen in Yokosuka Naval Arsenal*], Yokosuka, 1937, 8-9.

Table 1. Educational Background of Newly Recruited Junior Engineers (%)

	1907	1908	1909	1910	1911	Average
Corporate School	41.0	22.2	17.2	42.9	17.2	27.9
Apprentice	2.6					0.8
Industrial Polytechnic	12.8	33.3	69.0	50.0	58.6	42.6
Technical School	0.0	5.6			6.9	2.3
Workmen's School for Engineering	7.7	5.6				3.1
Workmen's School for Science	2.6					0.8
High School (not graduate)	2.6					0.8
Junior High School	2.6	11.1				2.3
Junior High School (not graduate)	2.6	5.6		7.1	3.4	3.1
Elementary School	7.7	5.6	6.9		3.4	5.4
Unknown	17.9	11.1	3.4		10.3	10.1

Note: Number of other school graduate was 1 (0.7%).
Source: Kaigun-sho [The Department of the Navy], 'Shokuin-sintai-roku, Bunkanninjo' [Record of Employment and Discharge] each year.

Table 2. Educational Background of Newly Recruited Junior Engineers (%)

	1921	1922	1924	1925	1927	1928	Average
University		2.5					0.5
Industrial Polytechnic	18.2	17.5	36.4	48.1	35.7	58.3	29.3
Other Polytechnic	25.0	25.0			21.4	4.2	18.6
Junior High School	1.1	2.5					0.9
Junior High School (not graduate)	3.4	2.5					1.9
Technical School	2.3			7.4			1.9
Workmen's School	5.7	2.5			7.1		3.3
Upper Elementary School	23.9	12.5				4.2	12.6
Elementary School	2.3	17.5		3.7			4.7
Corporate School		7.5	40.9	22.2	28.6	25.0	13.0
Corporate Apprentice	5.7	2.5		3.7	7.1	4.2	4.2
Unknown	3.4	5.0		7.4			3.3

Note: Number of other school graduates was 13 (0.6%).
Source: Kaigun-shou [The Department of the Navy], 'Shokuin-sintai-roku, Bunkanninjo' [Record of Employment and Discharge] each year.

Table 3. Educational Background of Newly Appointed Superior Engineers (%)

	1921	1922	1924	1925	1927	1928	Total
University	9.1			12.5		4.8	5.9
Industrial Polytechnic	42.4	44.4	44.4	62.5	40.0	28.6	41.2
Other Polytechnic	12.1	11.1	11.1		20.0	19.0	12.9
Junior High School						4.8	1.2
Workmen's School		22.2	11.1		20.0	14.3	8.2
Upper Elementary School				12.5		9.5	3.5
Corporate School	30.3	11.1	33.3	12.5	20.0	14.3	22.4
Corporate Apprentice	3.0						1.2
Unknown	3.0	11.1					2.4

Note: Number of other school graduate was 1(1.1%)
Source: Kaigun-sho [The Department of the Navy], 'Shokuin-sintai-roku, Bunkanninjo' [Record of Employment and Discharge] each year.

Moreover, the corporate school was resumed in 1919 to admit talented workmen with age over 21 and more than 3-year shop floor experience. The selected workmen learned the basic theories of shipbuilding and mechanical engineering together with factory practices; and then the graduates were hired for the junior posts of engineering.[18]

As presented in Table 2, the rate of university graduates and polytechnic graduates within the newly recruited junior engineers (position of workshop technician) during the 1920s reached approximately 50 per cent. In the first half of the same period, elementary school graduates covered 20 to 30 per cent of the population; then in the second half, the ratio was replaced by the graduates of corporate technical schools. The latter group were also elementary school graduates; thus, this implies that they were employed, at the beginning, as wage earners right after their graduation. They acquired technical knowledge from workshop practices, and then learned basic theories through the corporate school: therefore, the personnel administration of hiring those internally developed labourers for the junior posts continued. In addition, and surprisingly, their path of career development was extended to the positions of superior engineers.

Table 3 presents that only 60 per cent of the total population of the upper-class engineers was covered by university and polytechnic graduates whereas the graduates of corporate school occupied nearly 20 per cent during the 1920s.

The development of the personnel system of promoting a part of talented workmen and workshop technicians to engineering staffs was realised by the fact that the skilled workmen and technicians with sufficient operational knowledge and experience at shop floors played a significant role in the ship building of the time. Traditional Japanese-style wooden vessels were built without the use of written designs. Instead, the master ship carpenter would instruct the ship carpenters under his command to prepare the materials and assemble the ship based on a vision in his head. Since large Western-style ships, particularly those made of steel, involved complex structures and were built by large numbers of workers, they required the preparation of designs and the accurate preparation and assembly of materials based on written plans. The Yokosuka Naval Arsenal built its first steel craft in 1887, and it continued to build warships after that, trying to keep up with British advances in shipbuilding technologies. However, the designs prepared at the time consisted only of basic designs such as specifications, general arrangement plans, lines, and midship sections together with detailed designs such as expansion plans and construction plans based on these basic designs. No working drawings were prepared providing instructions on how the Arsenal's shipbuilding sections should build the ship.[19] For this reason, there was a need for human resources who could understand the content of the detailed design plans, envisage methods of preparing the materials based on these, and control the shipbuilding process by directing workers accordingly. This was their role. They had not lost this important role even

18 *Ibid*, 94-103.

19 Nakaoka Tetsuro, *Kindai Nihon Gijutsu no Keisei* [*The Development of Modern Japanese Technology*], Tokyo, 2006, 364; Ueda Osamu, *Keiei Gorika to Roshi-kankei* [*The Rationalization of Business and Industrial Relations*], Kyoto, 1999, 68-69.

after the World War I. Indeed, an engineering journalist who interviewed Shinto Hisashi, who had experience as a shipbuilding engineer at the naval arsenal during the World War II and contributed significantly to shipbuilding technology after the war, recorded that when Shinto was working in the arsenal detailed plans showed how the materials would be assembled but not how to prepare them, so that practical shipbuilding methods were left to veteran foremen.[20] In addition, a shipbuilding engineer who joined the naval arsenal in 1919 wrote of his surprise at the way the design section included not a few staff who were highly familiar with materials and construction methods and how they had begun their careers as young arsenal workers who were promoted through education at the in-house school.[21] The unique scheme of promotion was therefore developed to increase their working incentive.

In contrast, the role of superior engineers with university or polytechnic education was limited to the managerial posts of each sector and preparation of the blueprints of basic design. It was therefore inevitable to let them have workshop experiences.

As described in Table 4, the personnel scheme of recruiting university and polytechnic graduates as workmen at shop floor and then promoting them to junior engineers became common during the 1920s.

Table 4. The Number of Years of the Graduates of Polytechnics from Recruitment until Appointment to Junior Engineer

Appointed Years		1921	1922	1924	1925	1927	1928
Years	0	25	9	1			3
	1	11	4	7	7		3
	2	1	3	3	5	5	4
	3			1	1		3
	4					2	
	5					1	1

Source: Kaigun-sho [The Department of the Navy], 'Shokuin-sintai-roku, Bunkanninjo' [Record of Employment and Discharge] each year.

(2) Mitsubishi Nagasaki Dockyard

The largest private industrial leader, Mitsubishi Shipbuilding Company's Nagasaki dockyard, was not an exception. The shipyard established at Nagasaki by the Tokugawa Shogunate in its closing years was taken over by the new Meiji government, which sold it to Mitsubishi in 1887, when it became a private shipyard. When it was sold to Mitsubishi, most of the engineers resigned because they did not want to lose their status as government officials. As a result, with the exception of a small number of newly hired British engineers shipbuilding there was led mainly by foreman and engineers who had attained their technical knowledge through work experience. For example, Kawabe Toyoharu, recruited from another shipyard by a British engineer to serve as foreman, was contracted to lead a team of workers in building the hull of the first three steel vessels to be built at the shipyard and also

20 Maema Takanori, *Senkan Yamato Tanjo* [*The Birth of Battleship Yamato*], Tokyo, 2005, 94.

21 Hori Motomi, *Kaigun Zousenkan toshiteno Hibi* [*The Days as Naval Engineers*], Tokyo, 1976, 117.

secured a contract to repair a German vessel. He was remunerated highly as a result. He used the money he earned from these contracts to travel to Britain to study riveting, and then he developed the riveting method that would become standard at the shipyard.[22] Shipbuilding came to depend on people like him who had attained their technical knowledge from work experience because in most cases steel shipbuilding was conducted with only basic plans having been prepared in advance, and even when detailed plans had been prepared they usually were incomplete. Materials preparation and ship assembly were conducted through people like Kawabe looking at such incomplete plans and then determining the correct methods to use.

The employment of university or polytechnic graduates started in 1890, and the recruitment from university increased from the beginning of the twentieth century. In 1911, the corporate policy of employing only university graduates for the superior posts was forged. As a result the role of written designs became more important, and engineers had stronger control of shipbuilding work. In 1899, the *Hitachi Maru,* with total tonnage of 6000 tons, became the first ship to be build based on detailed designs purchased from a British shipyard. The detailed plans for the *Tenyo Maru,* built in 1908 with total tonnage of 13,000 tons, were drawn by a Japanese engineer trained at the University of Glasgow.[23] In 1908, the system of contracting work to foremen was abolished.

However, human resources combining basic theoretical knowledge with knowledge of the shipbuilding process obtained through real-life work experience remained important. Just like at the naval arsenal, instructions for construction methods were not written on the detailed designs. A Mitsubishi Shipbuilding Company engineer wrote in memoirs about the prewar shipyards that while the only designs prepared were the basic design, the expansion plan for the outer shell, and the arrangement plan for steel materials and machinery, foremen with years of experience in each workplace carried collections of basic plans with them in their heads, which they used to decide on detailed construction methods that fit the basic designs, and it was their work instructions that made shipbuilding possible.[24]

In consequence, the company decided to promote staffs without university education to the superior posts in engineering as well.[25]

Table 5 indicates that, from 1918 to 1926, nearly a half of the new superior technical staffs were the recruitment of workshop technicians without any kind of high education. Some of the new staffs were the graduates of Mitsubishi Kogyo Yobi Gakko (preparatory school of engineering), which was established in 1899 to train operatives for blueprint reading; at least 37 men were included, and their educational background was elementary school only.[26]

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22 Nakaoka, *op. cit.*, 380-383.

23 *Ibid*., 400-406.

24 Tanaka Shoichi, 'Sendai Mushi Yawa, 2 [Night Tales of a Worm at Building Berth, no. 2]', *Kansai Zosen Kyokai Shi* [*The Journal of Kansai Society of Naval Architects and Ocean Engineers*], no. 187, 1982, 195.

25 Mitsubishi Jukogyo (Mitsubishi Heavy Industries, LTD), *Mitsubishi Jukogyo Kabushiki-kaisya Shi* [*A History of Mitsubishi Heavy Industries, LTD*], Tokyo, 1956, 167, 172.

26 Mitsubishi Goshi Kaisha [Mitsubishi Limited Partnership], *Rodosha Toriatsukai-kata ni kansuru Chosa Hokokusho*

Table 5. Ratio of Ex-technician within Newly Appointed Superior Engineers

Year	Ex-Technician	Total	Ratio (%)
1918	8	37	21.6
1919	6	44	13.6
1920	16	33	48.5
1921	3	11	27.3
1922	24	29	82.8
1923	11	14	78.6
1924	5	17	29.4
1925	15	24	62.5
1926	15	20	75.0
Total	103	229	45.0

Souce: Mitsubishi-shashi Kanko-kai [Publishing Committee of Chronicle of Mitsubishi], *Mitsubishi Shashi* [*Chronicle of Mitsubishi*], Tokyo, 1979-1982, each year.

Just like the naval arsenal's personnel scheme, Mitsubishi also developed a programme of transferring superior engineers with university education to the post of apprenticeship at workshops to let them obtain live knowledge and experience. In 1923, the period of apprenticeship was fixed as a half a year, then, extended to a year in 1927.[27]

(3) Steel Industry

Yahata Ironworks which started its operation in 1901, took initiative in the Western technology-driven development of the iron and steel industry in Japan. This ironworks is the major forerunner of Shin Nippon Steel Corporation, a focal company of the iron and steel industry in post-war Japan. On founding the ironworks, the government decided to fully rely on the introduction of German technologies, and as a result, the technology of the Yahata Ironworks was severed from the iron-production technology traditionally used in Japan. Several German engineers were invited to Japan as instructors for the technologies to be introduced, but neither their theoretical knowledge nor their practical experience was sufficient, thus not allowing them to fulfil their roles. The German foremen, who were employed at the same time as the engineers, had a wealth of practical experience. The Japanese engineers, after receiving higher technical education and having acquired the theoretical knowledge of iron-making by studying in Germany, learned the German foremen's techniques onsite at the manufacturing plant under their guidance The Japanese engineers possessed high degrees of academic knowledge. This can be seen in documents of the time that describe German foreman as admiring the Japanese engineers for their learning. Soon after operation began in February 1901, there was a problem with the blast furnace. The causes of the problem were poor coke and incompatibilities between the structure of the

Sono-ichi, Furoku Sono-ni [*The Investigation Report on the Way of the Treatment of Workmen,* no. 1, Appendix, no. 2], preserved in Mitsubishi Shiryokan [The Mitsubishi Economic Research Institute Archives Division], 1912, 54-75; Mitsubishi-Shashi Kanko-kai [Publishing Committee of Chronicle of Mitsubishi], *Mitsubishi Shashi* [*Chronicle of Mitsubishi*], Tokyo, 1979-1982, each year.

27 *Ibid*., 35, 1927-1930, 8.

German blast furnace and the Japanese raw materials.[28] It is well known that the Japanese engineers succeeded in remedying these causes and restoring operation.

The characteristics of personnel management at Yahata Ironworks are found in the emphasis on educational background as a condition of employment since its foundation. At the time of the launch of operation, an official notice was released stating that prospective engineers should have a minimum educational background of a public technical school graduate. Likewise, prospective employees in semi-staff condition should have completed at least the third year of public junior high school.[29] The results of analysis on the staff's curriculum vitae of Yahata Ironworks indicate a wide difference in their actual careers according to the educational backgrounds of the employees. Table 6 shows the educational backgrounds of those employed as superior engineers during the period from 1899 to 1911. University graduates dominated the position and even industrial polytechnics graduates were not hired as superior engineers.

Table 6. Educational Background of Newly Appointed Superior Engineers

	Tokyo Univ.	Kyoto Univ.	German Univ.	Polytechnics	Elementary School	Unknown	Total
1900	7				2		9
1901	2		1	1		1	5
1902	4	2			1		7
1903	1						1
1904							
1905		1				1	2
1906						1	1
1907							
1908	1					1	2
1909	1					1	2
1910							
1911	1	1					2
Total	17	4	1	1	3	5	31

Source: Yahata Ironworks, The Applications of Appointment to the Superior and Junior Staffs.

Table 7 shows the educational backgrounds of those employed as junior engineers during the same period. With the exception of university graduates who were promoted to an superior engineer position within a few years of employment as a junior engineer, many junior engineers were industrial polytechnics graduates, who were employed as junior engineers immediately following graduation. The career path to a superior engineer position was closed for this kind of junior engineers.

28 Saegusa Hirone and Iida Ken'ichi, *Kindai Nihon Seitetsu Gijutsu Hattatsu-shi* [*A History of the Technology of Iron Manufacturing in Modern Japan*], Tokyo, 1966, 201-205, 418-440.

29 Mori Tateshi, 'Kan'ei Yahata Seitetsusho no Romu-kanri, no. 1 [The Labour Management in Yahata Ironworks, no. 1]', *Tokyo University, Keizai-gaku Ronshu* [*Economics Review*], vol. 71, no. 1, 2005, 24.

Table 7. The Educational Background of Newly Appointed Junior Engineers (employed or promoted from 1899 to 1911)

University	28
Polytechnics	48
High School	5
Technical School	11
Junior High School	5
Workmen's School	32
Others	5
Unknown	11
Total	145

Source: Yahata Ironworks, The Applications of Appointment to the Junior Staffs.

Other than those previously mentioned, there were a noticeable number of graduates of workmen's schools who were hired as junior engineers after having experienced practical operations in and out of Yahata Ironworks. A majority of those who were hired as employees in semi-staff condition and were not promoted to a position of junior engineer or higher consisted of workmen's school graduates and elementary school graduates. Most of the elementary school graduate employees in semi-staff condition had extensive practical experience outside of Yahata Ironworks, and almost none of them had been promoted to an employee in semi-staff condition based on the recognition of their practical experiences within Yahata Ironworks. On the other hand, many technical school graduates were promoted to an employee in semi-staff condition after being hired as a workman immediately after graduating. Some of them attained the position of a junior engineer.

Meanwhile, the commencement of education for workmen on the theoretical knowledge of iron-making was delayed. In 1910, a corporate training programme was finally established and such education was at last initiated. Nevertheless, the education in the programme could not achieve its goals. Talented children coming from poor families, who could not pursue education at industrial polytechnics due to financial reasons, joined the school and devoted themselves to vigorous studies. They, however, were hired as workmen following graduation not given the hope of being promoted to the position of a company staff, despite their efforts. Consequently, a majority of them felt frustrated and left Yahata Ironworks.[30]

The method of human resource development at Yahata Ironworks was changed drastically by the reform in the company regulations of workmen and the corporate training programme implemented in the mid-1920s. In this reform, based on the purpose of 'harmony of technology and labour', educational background was added to the qualifications needed to be assigned as a chargehand.[31] In addition, while three initial years of experience as a workman to work at the manufacturing site became one of the conditions of promotion to a

30 Iwauchi Ryoichi, 'Yahata Seitetsusho ni okeru Kyoiku Kunren no Hensen, no. 1 [The Transformation of Education and Training in Yahata Ironworks]', *Meiji University, Keiei Ronshu* [*Business Review*], vol. 37, no. 2, 1990, 30-34.

31 Tajiri Seigo, 'Shokko Kisoku no Kaise ni tsuite [On the Amendment of the Regulations of Workmen]', *Yahata Ironworks, Kurogane (in-house Journal)*, no. 163, 1926.

chargehand position for a technical school graduate, elementary school graduates came to qualify as a chargehand on equal terms with technical school graduates after 3 years of service and subsequent study in the corporate training programme, which offered the same standard of education as a technical school. In addition, an advanced course was formed in the corporate training programme. For employment as staff, even technical school graduates required at least three years of experience in practical operations followed by schooling at the advanced course, while the system enabled elementary school graduates to be employed as staff on equal terms with technical school graduates as long as they completed the advanced course.[32] Every year, about twenty to thirty people graduated in the advanced course. This fact shows that the corporate training programme commenced for the engineers and foremen with theoretical knowledge and experiences.

Table 8. The Educational Background of Newly Appointed Superior Engineers

Year	University	Polytechnics	Technical School	Workmen's School	Other & Unknown	Total
1913	4	1			1	6
1914	2				1	3
1915	2					2
1916	7	6		4	1	18
1917	4	1				5
1918	7	1		1		9
1919	7	4	1	1	2	16
1920	1	4	1			6
1921	6					6
1922						
1923	3	1				4
1924						
1925	7	3			1	12
1933	13	7	5		1	35
Total	63	28	7	6	7	122

Source: Yahata Ironworks, The Applications of Appointment to the Superior and Junior Staffs.

Reflecting such changes in the human resource development system, cases of employees of weak educational backgrounds getting promoted to a junior engineer or superior engineer came to be observed. As shown in Table 8, while no industrial polytechnics graduates were hired as or promoted to superior engineers at time of foundation, they formed a large share of the engineer positions, and cases of appointing superior engineer positions to workmen's school and technical school graduates were also observed.

Looking at Table 9, elementary school graduates started being assigned to junior engineer positions, and in 1925 and 1933, graduates of the corporate training programme were appointed as junior engineers.

32 Id., 'Seitetsusho Kyoshujo Kitei ni tsuite [On the Regulation of Corporate Training Programme]', *ibid.*, no. 186, 1927.

Table 9. The Educational Background of Newly Appointed Junior Engineers

Year	University	Polytechnics	Technical School	Workmen's School	Junior High School	Elementary School
1914			1			
1915		2				
1916	8	7	4	1		1
1917	8	10	5		1	
1918	15	12	2			1
1919	10	8	2	2	1	2
1920	3	23	1		1	
1921	3	13	11	3	1	5
1922	1	1	1	1	1	1
1923	3	4	5		1	
1924	7	2				
1925	9	10	15	2	6	
1933	4	21	7	2	2	1
Total	71	113	54	11	14	11

Year	Corporate Training Programme	Other & unknown	Total
1914			1
1915			2
1916		2	23
1917			24
1918			30
1919		3	28
1920			28
1921		8	44
1922		1	7
1923			13
1924			9
1925	7	1	50
1933	7	2	46
Total	14	17	305

Note: Elementary school includes upper elementary school.
Source: Yahata Ironworks, The Applications of Appointment to the Junior Staffs.

On the other hand, people who received higher technical education started building their onsite experience through employment as workman-registered research staff from 1910. After the research staff system was abolished in 1918, they were hired as an employee in a semi-staff condition and built up their professional experience to be promoted to the position of junior engineer and then superior engineer.[33] Yahata Ironworks began undertaking efforts to cultivate those who completed higher education from onsite operations.

33 Kageyama Hitoshi, *Seitetsu Mukashi Gatari* [*The Old Stories on Yahata Ironworks*], 1964, 19; Yahata Ironworks, *Han'ninkan Ika Kanki Jirei Gengi* [*The Applications of Appointment to the Junior Staffs*], each year.

(3) Electric machinery industry

Japan's electric machinery industry began to develop in the second half of the nineteenth century with the introduction from overseas of electric technologies, which at that time had been unknown to the Japanese people. By the mid-1930s it had secured roughly the same level of technological abilities as the electric machinery industries of the leading developed countries. This growth was led by Shibaura Engineering Works, one of the predecessors of today's Toshiba. My research shows that while Shibaura quickly promoted university-graduate engineers to core positions in its engineering section, this exposed the limits of their technological capabilities, so that engineers who had acquired skills through practical experience played important roles in management of manufacturing sections and in technological development. In addition, Shibaura's adoption of a human-resources policy offering those employees opportunities for promotion to higher positions in order to increase their motivation was similar to examples seen in the shipbuilding and steel industries. We will discuss these two points in detail below.

Shibaura Engineering Works began with the communications equipment plant founded in 1875 by Tanaka Hisashige, who became famous during the Tokugawa Period as an inventor using skills acquired through practical experience alone. When Mitsui, at the time Japan's largest zaibatsu, acquired control of the company after it had reached a management deadlock in 1893, it recruited engineers who were university graduates to core engineer positions and hired several young university-graduate engineers, placing them chiefly in design sections but also in manufacturing sections. As a result, university-graduate engineers came to control both design and manufacturing sections.[34]

However, this structure in which university-graduate engineers played central roles was changed in the reforms conducted in 1899 intended to rebuild Shibaura's management. In these reforms, most university-graduate engineers who had been appointed to core positions in engineering sections were laid off, and Kobayashi Sakutaro, who had learned engineering techniques through practical experience alone and later would be praised as an "engineering genius," was chosen for the new position of factory superintendent, with responsibility for the manufacturing sections.[35] Famous as somebody who had possessed outstanding talent related to building machines since childhood, Kobayashi had joined Shibaura with the goal of becoming a practical engineer after gaining experience in mechanical design at Mitsubishi's Nagasaki shipyard and then teaching himself the principles of electricity. He had been appointed an engineer due to the high regard in which his talents were held.[36] At the same time, young university-graduate engineers were assigned to positions of responsibility in the design section to replace the university-graduate core engineers who had been laid off. These reforms can be considered an attempt to fuse theoretical knowledge with practical experience by placing the design section under the control of these young engineers while engineers who had

34 Tokyo Shibaura Denki (Toshiba), *Shibaura-seisakusho 65 Nenshi* [*65 Years History of Shibaura Engineering Works*], Tokyo, 1940, 11-32.

35 Ohtaguro Shigegoro, *Omoide wo Kataru* [*Talk on Memoir*], Tokyo, 1939, 199-201.

36 Kimura Yasukazu, *Kobayashi Sakutaro Den* [*A Life of Kobayashi Sakutaro*], Tokyo, 1939.

learned through practical experience would be in charge of the manufacturing section.

Following these reforms, Shibaura entered a phase of rapid growth as a manufacturer of electric machinery. This growth was supported by the establishment of discipline in the workplace and progress in the development of technology.

Until these reforms, Shibaura's manufacturing sections effectively had been under the control of workmen due to a shortage of practical experience among university-graduate core engineers. The workmen had failed to follow the instructions of the core engineers, instead working in their own preferred ways, and occasionally they behaved in ways detrimental to workplace discipline.[37] Following these reforms, the working methods and behavior of workmen were strictly controlled as a result of placing Kobayashi Sakutaro, who possessed a wealth of practical experience, in a supervisory role over the manufacturing sections.[38] Furthermore, senior foremen, who had influence among the workmen, were laid off, and discipline was established thoroughly in manufacturing sections.

In the area of product development as well, around this time Shibaura began to succeed in manufacture of products that would leave their marks on the history of the Japanese electric machinery industry, and the company's rapid progress was apparent. Kishi's direct-current generator, which won a gold prize at the St. Louis World's Fair, is a typical example. While this generator had been designed by Kishi Keijiro, a university-graduate engineer who played a central role in Shibaura's technological development, the machine used to cut wires to uniform lengths, essential to its manufacture, had been developed by Kobayashi Sakutaro.[39] This achievement came to symbolize the importance to Shibaura's technological development of fusing theory with practical experience.

After entering into a technological tie-up with GE in 1909, Shibaura promoted Kishi and Kobayashi to managing directors in 1911. At that time the manufacturing sections too were put under the control of engineering polytechnics-graduate engineers. However, Shibaura continued to focus on training engineers through practical experience.

Shibaura's training method of hiring university-graduate engineers as trainees and then giving them six months' to two years' experience in the status of workmen to improve both their character and their skills is testimony to how it recognized the importance of practical experience in training engineers. This training method, known as trainee education, began at Shibaura at the dawn of the twentieth century, earlier than at other companies, and was systematized with the establishment of related rules in 1933.[40]

At the same time, training to instruct workmen in basic theoretical principles also began with the participation of workmen in a foremen-training class called tekizai kyoiku ("training the right people for the job") that began in 1905 at the Tokyo Workmen's School.[41] This

37 Ohtaguro, *op. cit.*, 206.

38 Kimura, *op. cit.*, 73.

39 *Ibid*., 68-69; Ohtake Bukichi, *Kougakushi Kishi Keijiro Den* [*A Biography of Kishi Keijiro, a Bachelor of Engineering*], Tokyo, 1931, 15.

40 Tokyo Shibaura Denki, *op. cit.*, 175-176.

41 Sumiya Mikio, *Nihon Shokugyo Kunren Hatten-shi,* Ge [*The History of Vocational Training in Japan*, vol. 2], Tokyo, 1971, 26.

training program shows how Shibaura attempted to train workmen to understand theoretical principles as a means of training its human resources in order to close the gap between university-graduate engineers and workmen.

Table 10. Salaried Staff Employment and Promotion

Dates	Employment	Promotion			
		From workmen	From daily wage staff	From temporally staff	From trainees
June - Nov. 1920					
Dec. 1920 - May 1921	7				
June - Nov. 1921	26				
Dec. 1921 - May 1922	31		6		
June - Nov. 1922	3				
Dec. 1922 - May 1923	29		4		
June - Nov. 1923					
Dec. 1923 - May 1924	49		29		
June - Nov. 1924	5				
Dec. 1924 - May 1925	37	2	21		
June - Nov. 1925	5	9	18		
Dec. 1925 - May 1926	32	4	23		
June - Nov. 1926		2	14		
Dec. 1926 - May 1927					
June - Nov. 1927	2				
Dec. 1927 - May 1928	4				
June - Nov. 1928	1				
Dec. 1928 - May 1929	2	3	32		
June - Nov. 1929	2	1			
Dec. 1929 - May 1930	17	17			
June - Nov. 1930					
Dec. 1930 - May 1931	2				
June - Nov. 1931	1				
Dec. 1931 - May 1932	2				
June - Nov. 1932	1			3	
Dec. 1932 - Apr. 1933	2		41	5	
May - Oct. 1933		2		2	
Nov. 1933 - Apr. 1934	4		34	2	14
May - Oct. 1934		1		2	
Total	264	41	222	14	14

Source: Shibaura Engineering Works, In-House Business Report, each year.

Table 11. Employees in Semi-staff Condition Employment and Promotion

Dates	Employment	Promotion		
		From temporary semi-staff	From Workmen	From associate semi-staff
June - Nov. 1920				
Dec. 1920 - May 1921	58			
June - Nov. 1921	77			
Dec. 1921 - May 1922	236	11		
June - Nov. 1922	99			
Dec. 1922 - May 1923	129		11	
June - Nov. 1923	13			
Dec. 1923 - May 1924	147			
June - Nov. 1924	119			
Dec. 1924 - May 1925	99		37	
June - Nov. 1925	63		13	
Dec. 1925 - May 1926	121		13	
June - Nov. 1926	34		6	
Dec. 1926 - May 1927	10		14	
June - Nov. 1927	2			
Dec. 1927 - May 1928	11			
June - Nov. 1928	67		1	9
Dec. 1928 - May 1929	88		8	4
June - Nov. 1929	90		79	1
Dec. 1929 - May 1930	31		2	5
June - Nov. 1930	7		3	2
Dec. 1930 - May 1931			3	
June - Nov. 1931			3	
Dec. 1931 - May 1932	4		1	7
June - Nov. 1932	6		2	
Dec. 1932 - Apr. 1933		1	1	
May - Oct. 1933		2	4	
Nov. 1933 - Apr. 1934	1	1		
May - Oct. 1934	1	36	23	
Total	1,513	51	224	28

Source: Shibaura Engineering Works, In-House Business Report, each year.

One result of the way employees who acquired skills through practical experience played an important role in the advancement of Shibaura's technologies was the company's fairly large number of high-ranking employees who had been promoted to higher status from the ranks of workman and employee in semi-staff condition. As seen in Table 10, from December 1921 through October 1934 the number of high-ranking employees promoted from the position of employee in semi-staff condition to that of monthly salaried employee, high-ranking employee, was roughly equal to the number hired directly as monthly salaried employees. If we add the number who had been promoted from workmen to monthly salaried employees, the

total number promoted from lower positions to monthly salaried employees accounted for the majority of employees who became monthly salaried employees during this period.

As seen in Table 11, among employees in semi-staff condition the number who had been promoted from workmen was enough to offset the decrease in employees in semi-staff condition due to their promotion to monthly salaried employees. This can be considered a sign of how the importance of practical experience was incorporated into the HR system.

Conclusion

In the advance of the Japanese heavy industry, two sorts of technical talents were required: a group of workforce for adopting the western technologies, and the other group of skilled engineers, who could direct workmen and workshop technicians in operation and understand engineering theories as well. The former was supplied by university graduates alongside the establishment of higher education in Japan; then, the latter was grown by both the corporate training programmes for talented workmen and workshop technicians (with relatively weak educational background) and the personnel scheme of promoting them to superior posts. The Japanese firms tried out a plan of fully utilising their potentials by promoting them to the most prestigious position of workman i.e. chargehand, but the attempt was unsuccessful since chargehands did know their unsatisfactory social status and even tried to leave the post of chargehand, if possible. It was thus necessary to firstly develop an incentive system of promotion, based upon corporate training programmes, and then integrate it into "the educational status system". The personnel ways and means enabled management of any kind of potential disaccord or communicational blockade between superior staffs (with university-level education) and workmen and workshop technicians; and the personnel scheme facilitated the efficient internalisation of the imported technologies at shop floors.

It already has been shown that during the World War II promotion to superior status beyond educational qualifications expanded and the in-house status system was relaxed.[42] After Japan's loss in the war, at many major firms clerical staff and factory workers were organized into a single labor union, and management was forced to accept demands to abolish systems of managing employees through separating them by status. However, even though blatant discrimination between clerical staff and factory workers to the extent that factory workers had felt strongly discriminated against was no longer visible, systems remained in place under which employees were assigned duties and their careers and compensation determined based on their educational qualifications. Almost no studies have examined empirically how this system actually operated. A challenge for the future will to fill in this gap in the research.

42 Nagashima Osamu, *Nihon Kigyouron Josetsu* [*The Introduction of the Research on Japanese Corporations*], Tokyo, 2000, 314-316.

Cotton: The Making of a Modern Commodity

Giorgio Riello*

Abstract. Cotton and cotton textiles have long had a prime position in histories of industrialisation and more recently in narratives of the Divergence between the West and 'the Rest' in the eighteenth century. This paper brings together the analysis of the production and trade of raw material and that of consumption of finished cloth. It argues that cotton was the first 'transcontinental' manufactured product whose commodity chain brought together capital, labour, land, technologies and consumers in different continents. Central to the creation of what can be seen as a rather 'modern' way of conceptualising resources and commodity production and trade was Europe and its emerging industrial technologies. Yet, the story of cotton and cotton textiles in the eighteenth century needs also to be read against a global background that gives due consideration to environmental and resource issues.

Introduction

Raw cotton, spun yarn and cotton textiles are among the most traded and treasured commodities worldwide. Cotton is the material of our clothing and furnishing and – notwithstanding the success of synthetic fibres in the twentieth century – is still the most common fabric for everyday use. This was not the case just a few centuries ago. When European traders landed in India in the early sixteenth century, they were astonished by the variety and quality of cotton textiles for sale. India was the major world producer of cotton and cotton textiles, though other areas of Asia were developing their own cultivation and cotton manufactures. Over the following centuries three major global changes affected this commodity. First, its consumption became truly global when Asian cottons started to be consumed not just in Europe but also in many parts of Africa and the Americas. Second, new areas of the globe started to cultivate raw cotton, in particular the Americas where plantations were cultivated by slaves brought from West Africa. And finally, Europe emerged as a new area of production of cotton cloth to rival and eventually replace India. Mechanised production led to an 'industrial revolution' that changed the economic trajectory of the West and the 'rest' of the world.

These three narratives have been considered as separate and largely seen within three distinct historiographical contexts (Figure 1). The first is a narrative of trade and consumption that in recent years has been recast to encompass wider geographies. Its changing agenda will be the topic of the first part of this paper. The second is a narrative of slavery and the ecological potential provided by a vegetable fibre such as cotton. This will be the subject of the second part of my paper and will consider the importance of raw materials

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as well as finished products. And finally the last one is a narrative of industrialisation and economic divergence that is often linked to mechanisation and industrialisation. The final part of this paper, however, would like to relate the classic story of the rise of cotton manufacturing in Europe to both markets and resources. I claim that the true innovation brought about by the setting up of cotton textile manufacturing in Europe was not its reliance on machines or its industrial organisation; it was instead its ability to manage a new – and the first – 'commodity chain' that was transcontinental.

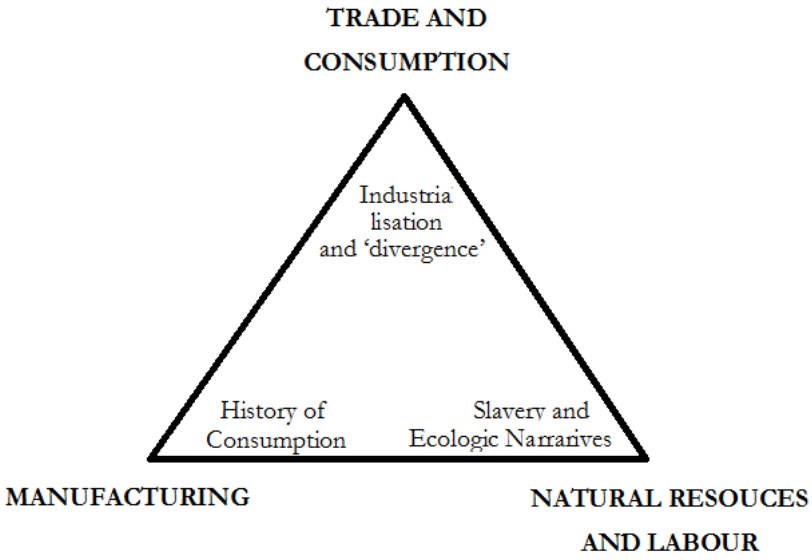

Figure 1. Three Historiographical Traditions for Cotton and Cotton Textiles

Markets and Consumers: Globalising Cotton Textiles

In the past thirty years, the analysis of cotton and cotton textiles has been re-written from the agenda of trade and consumption. Unlike older narratives that posited cotton at the core of the industrial revolution (famously Hobsbawm wrote that 'Whoever says Industrial Revolution, says cotton'), more recent and more culturally-influenced approaches have seen cotton textiles at the core of the consuming habits of early modern people around the world.[1] Such interpretations underline that by the time the first Europeans started to trade directly with Asia in c. 1500, cotton cloth produced in the Indian subcontinent had already secured markets across the Indian Ocean and beyond. In the centuries after 1500 Indian cottons

1 Eric Hobsbawm, *Industry and Empire: From 1750 to the Present Day* (New York: Penguin, 1999), 34. For an overview of this recent literature, see: Prasannan Parthasarathi and Giorgio Riello, "From India to the World: Cotton and Fashionability", in Frank Trentmann (ed.), *Handbook of the History of Consumption* (Oxford: Oxford University Press, 2012), 145-70.

conquered new markets, especially in Europe and the Americas, and made inroads into the habits of consumers almost everywhere in the world.[2] This narrative appears particularly 'modern' in the sense that it prefigures many of the traits that world trade came to assume in modern industrial societies. Unlike precious and expensive Chinese silks, Indian cotton textiles reached the most remote parts of the globe and changed the consuming habits not just of the elites but also of poorer consumers. They replaced traditional fibres such as arrowroot and linen, as cottons were both cheap and available in large quantities. Rather than being expensive oriental luxuries in reach of the few, Indian cottons were the first cheap mass commodity satisfying the everyday needs of Chinese peasants, African slaves and European housewives.[3] The scale of the trade and its consequences both globally and within local markets is emphasized.

Thanks to cotton, in the seventeenth and eighteenth centuries the position of the European trading companies in the Indian Ocean strengthened. The high profits of the intra-Asian cotton textile trade (coupled with the declining importance of spices) explain why European traders invested heavily in the so-called 'country trade' (intra-Asian trade). For example, by the 1770s European traders controlled approximately half of all shipments of goods from Batavia to India.[4] Batavia was the entrepot for trade in various Indian cottons such as guinea cloth and salempuri from the Coromandel Coast and Surat. Over 50,000 pieces of guinea cloth and salempuri from Coromandel, and baftas and niquanias from Surat were traded each year, most of which found their way to Java, Bali, East Indonesia and other parts of the archipelago.[5] The long hand of Europe is visible in the control of both production and consumption markets.

Yet, the 'modernity' of cotton did not just lay in its capacity to restructure global trade. It also reshaped consumption, especially in the West. Europeans – like many other consumers across the world – were attracted by the properties of the cotton fibre. They liked a softer, lighter type of cloth that – unlike silks or woollens – could be easily washed without damaging the cloth. Yet their fustians (mixes of linen and cotton) did not provide either the quality or the richness of colour of Indian textiles. This is the reason why the European East India companies started to import Indian cottons into Europe. Significant cotton textile cargoes arrived in Lisbon in the sixteenth century and found markets across the continent, from central Spain to southern England and Italy, but it was with the expansion of the Dutch and English companies in the first half of the seventeenth century that the importation of Indian cottons into Europe assumed a large scale.

Historians have underlined three aspects of the way in which cotton impacted on

2 Giorgio Riello, "The Globalisation of Cotton Textiles: Indian Cottons, Europe and the Atlantic World, 1600-1850," in id. and Prasannan Parthasarathi (eds.), *The Spinning World: A Global History of Cotton Textiles, 1200-1850* (Oxford: Oxford University Press and Pasold Research Fund, 2009), 261-87.

3 See in particular my *Cotton: The Fibre that Made the Modern World* (Cambridge: Cambridge University Press, 2013), esp. chs 4-6.

4 Gerrit Knaap, *Shallow Waters, Rising Tide: Shipping and Trade in Java Around 1775* (Leiden: Brill, 1996), 88.

5 These textiles varied greatly in length. A piece of guinea cloth could be 100 feet long; a piece of salempuri was 65 feet long; a piece of bafta was c. 50 feet long; and a piece of niquanias c. 30 feet. Knaap, *Shallow Waters*, 93, and 131.

European consumption. First, they considered the creation of new consuming habits. Together with other Asian goods, cotton textiles were perceived as exotic products that provided new designs and colourful patterns for consumers. Initially these textiles were used to decorate rooms. Large-scale wall hangings made of Indian chintz were popular in the seventeenth and throughout the eighteenth century to decorate bedrooms. These were called 'palampores' and represented scenes with birds and flora or the famous tree of life, all design motifs that were expressly produced for European consumers. Sometime in the second half of the seventeenth century, Indian cottons started to be used for clothing. The anonymous author of *The Trade of England Revived* (1682) explained that consumers wanted "a Bangale that is brought from India, both for Lynings to Coats, and for Petticoats too".[6] In one of Molière's plays of the 1670s a bourgeois gentleman, Monsieur Jourdain, decides to don an informal robe (called *banyan*) made of calicoes: 'I had this printed cotton made up', says Monsieur Jourdain with confidence, 'my tailor told me that people of quality wear them in the morning".[7] A few years later the English playwright and political commentator Daniel Defoe would frown upon the "persons of quality dressed in Indian carpets"[8]

Historians such as Maxine Berg, Beverly Lemire and John Styles – just to cite the most significant authors in this debate – have provided slightly different narratives of cotton's rise in Europe and its uptake by consumers of different social standings.[9] The banning of Indian cottons across Europe in the period 1686 to 1774 suggests that imported cottons were seen as sufficiently detrimental to local textile industries to deserve a total ban. However, it seems that bans were quite ineffectual at stopping consumers from purchasing Indian calicos and chintzes.[10] In England, as in France and elsewhere, people continued to wear forbidden cloth, risking fines, incarceration or simple humiliation as was the case of the wife of a councillor in the French city of Rennes who was surprised "at eleven o'clock in the morning near the city walls, dressed in calicoes".[11]

Scholars have questioned whether a 'calico craze' – a truly mass fashion for Indian cloth – swept Europe or if the use of cottons remained modest until the start of the European

6 *The Trade of England Revived: and the Abuses Thereof Rectified* (London, 1681), 16-17.

7 Cit. in Riello, "Globalization of Cotton Textiles", 271.

8 Cit. in Arno S. Pearse, *The Cotton Industry of India, being the Report of the Journey to India* (n.a., 1930), 19.

9 Maxine Berg, "Manufacturing the Orient: Asian commodities and European Industry 1500-1800," in Simonetta Cavaciocchi (ed.), *Prodotti e tecniche d'oltremare nelle economie europee. Secc. XIII-XVIII. Atti della Ventinovesima Settimana di Studi, 14-19 aprile 1997* (Florence: Le Monnier, 1998), 385-419; id., "In Pursuit of Luxury: Global History and British Consumer Goods in the Eighteenth Century," *Past & Present,* 132 (2004), 85-142; Beverly Lemire, *Fashion's Favourite: The Cotton Trade and the Consumer in Britain, 1660-1800* (Oxford: Oxford University Press and Pasold Research Fund, 1991); id., "Fashioning Global Trade: Indian Textiles, Gender Meanings and European Consumers, 1500–1800," in Giorgio Riello and Tirthankar Roy (eds.), *How India Clothed the World: The World of South Asian Textiles* (Leiden: Brill, 2009), 365-90; id., *Cotton* (Oxford: Berg, 2011); John Styles, "What Were Cottons For in the Industrial Revolution?," in Riello and Parthasarathi, *Spinning World*, 307-26; id., "Indian Cottons and European Fashion, 1400-1800", in Glenn Adamson, Giorgio Riello and Sarah Teasley (eds.), *Global Design History* (Basingstoke: Routledge, 2011), 37-46.

10 Lemire, *Cotton*, 33-64.

11 Cit. in Philippe Hudrère, *Les Compagnies des Indes Orientales: trois siècles de rencontre entre orientaux et occidentaux* (Paris: Editions Desjonquères, 2006), 169-70.

cotton manufacturing industry in the 1770s.[12] They all agree however that cotton textiles played a major role in reshaping consumption patterns. This is a second important point that is underlined by Jan de Vries in his concept of an 'industrious revolution'.[13] Cheap printed calicos and chintzes were among the 'pupoluxe' goods that late-seventeenth- and eighteenth-century European consumers wanted.[14] Indeed, de Vries argues that such a demand could only be satisfied by an intensification of labour. Industriousness became not just a virtue but also a practice in order to supplement meagre earnings from land and artisanal activities especially on the parts of wives and daughters. Cotton textiles – perhaps not alone – instigated tremendous change in labour practices in Europe.

A third and final point comes specifically from Maxine Berg's contribution to such debates. She argues that Indian cotton textiles did not just reshape consumer demand (as Styles and Lemire argue) and by therefore intensify labour and expand the commercialisation of production in Europe (as argued by de Vries). Imported Indian cotton textiles were also key to product and process innovation in Europe. Berg thus connects trade, consumption and production and makes a strong case for an understanding of Europe's trajectory towards the substitution of imported manufactured goods with national domestic products. She also connects India and Europe not just via the medium of trade and design, but also through the importance of technology transfers (in cotton but also lacquer, porcelain, etc.).[15] By doing so she adds a qualitative dimension to manufacturing thus underlying the need on the part of Europe to match Indian product's quality.[16]

This focus on Europe has however created a somewhat false impression that other markets and consumers might have been less active or might have appreciated less the cultural value, material properties and economic potential brought about by cotton textiles. This is far from true: a now large historiography points to the fact that processes of import substitution were at play in different parts of the world. Western Europe was just one among the many world areas where Indian cotton textiles were replaced by local copies and imitations. This is the case for Southeast Asia as much as Western Africa.[17]

Historians have also scaled down the role of Europe in the early modern history of cotton textile trade. Prasannan Parthasarathi, for instance, underlines that cotton textiles were first and foremost central to the consuming habits of Indian consumers and that the Subcontinent itself remained the largest cotton textile market in the world well into the nineteenth

12 Carole Shammas, *The Pre-industrial Consumer in England and America* (Oxford: Clarendon, 1990), 96-100; Styles, "What Were Cottons for in the Industrial Revolution?"; id., *The Dress of the People: Everyday Fashion in Eighteenth-Century England* (London and New Haven: Yale University Press, 2007), 109-32.

13 Jan de Vries, "The Industrial Revolution and the Industrious Revolution," *Journal of Economic History,* 54: 2 (1994), pp. 249-270; id., *The Industrious Revolution: Consumer Behavior and the Household Economy, 1650 to the Present* (Cambridge: Cambridge University Press, 2008).

14 On the concept of 'populuxe', see: Cissie Fairchilds, 'The Production and Marketing of Populuxe Goods in Eighteenth-Century Paris', in John Brewer and Roy Porter (eds.), *Consumption and the World of Goods* (London and New York: Routledge, 1993), 228-48.

15 Berg, "In Pursuit of Luxury".

16 Maxine Berg, "Quality, Cotton and the Global Luxury Trade," in Riello and Roy, *How India Clothed the World*, 391-414.

17 For a summary, see Riello, *Cotton*, passim.

century.[18] Both old and new research underlines moreover that a large part of the world trade of cottons was not controlled by Europe. Steensgaard already showed in the 1970s the persistence of early modern land routes from India to the Middle East and Anatolia and proposed the enthralling idea that such a trade could be several times larger than the total trade of the East India companies.[19] John Guy in more recent years has focused his attention on Asian markets and has pointed to the fact that the intra-Asian trade (both by European and non-European intermediaries) in cotton textiles remained a thriving component of world trade.[20] Guy's work has found important developments in the scholarship of Ruth Barnes, Rosemary Crill and Robyn Maxwell.[21]

One might say that the scale and scope of European action has been re-sized. Yet, as my own work but also recent research by Robert DuPlessis and Kazuo Kobayashi underline, the globalisation of cotton textiles was one that interested Atlantic markets and the New World, areas in which Europeans played a dominant role.[22] Thanks to European traders, cotton textiles entered the vast space of the Atlantic Ocean, reshaping not just people's consuming habits but also the economies and societies of Europe, Africa and the Americas. An important outlet was the African market where cottons (both imported from India and produced in Europe) were sold in exchange for slaves to be employed in the American plantations. A Dutch trader explained that "the Blacks ... would rather have the entire purchase sum in dry goods, such as cottons, gingham, salempuris [cloth], calavap [cloth], etc. A sensible ship's captain knows, at whatever place on the Coast he is, which of his goods are in demand. But he does not know which goods will be in demand when he goes fifty mile further along the Coast".[23] Indeed West African consumers were very precise in their tastes

18 Prasannan Parthasarathi, "Cotton Textiles in the Indian Subcontinent, 1200-1800," in Riello and Parthasarathi, *Spinning World*, 17-42; id., *Why Europe Grew Rich and Asia did Not: Global Economic Divergence, 1600-1850* (Cambridge: Cambridge University Press, 2011), passim.

19 Niels Steensgaard, *Carracks, Caravans and Companies: The Structural Crisis in the European-Asian Trade in the Early 17th Century* (Copenhagen: Studentlitteratur, 1973). His work has been expanded in more recent times by Olivier Raveux who has studied the role of Armenian merchants and artisans in linking India, the Middle East and the Mediterranean in the trade and manufacture of cotton textiles. Olivier Raveux, "Espaces et Technologies dans la France méridionale d'ancien régime: l'example de l'indiennage marseillais (1648-1793)," *Annales du Midi,* 116: 246 (2004), 155-70; id., "The Birth of a New European Industry: l'indiennage in Seventeenth-Century Marseilles," in Riello and Parthasarathi, *Spinning World*, pp. 291-306.

20 John Guy, "Sarasa and Patola: Indian Textiles in Indonesia," *Orientations*, 20: 1 (1989), 48-60; id., *Woven Cargoes: Indian Textiles in the East* (London: Thames & Hudson, 1998).

21 Ruth Barnes (ed.), *Textiles in Indian Ocean Societies* (London and New York: Routledge, 2005); Rosemary Crill (ed.), *Textiles from India: The Global Trade* (Calcutta: Seagull, 2005); Rosemary Crill and Ian Thomas, *Chintz: Indian Textiles for the West* (London: V&A Publications, 2008); Robyn Maxwell, *Textiles of Southeast Asia: Tradition, Trade and Transformation* (Melbourne: Australian National Gallery and Oxford University Press, 1990).

22 See in particular: Riello, "Globalization of Cotton Textiles"; id., "Indian Cottons and British Trade: The Connection between the Indian and Atlantic Oceans in the Long Eighteenth Century" (Paper presented at the 8th Anglo-Japanese Conference of Historians, Osaka, 10-11 August 2015); Robert S. DuPlessis, 'Cloth and the Emergence of the Atlantic Economy', in Peter A. Coclanis (ed.), *The Atlantic Economy during the Seventeenth and Eighteenth Centuries: Organization, Operation, Practice, and Personnel* (Columbia, SC: University of South Carolina Press, 2005), 73-94; id., 'Cottons Consumption in the Seventeenth- and Eighteenth-Century North Atlantic', in Riello and Parthasarathi, *Spinning World*, 227-46; id., *The Material Atlantic. Clothing, Commerce, and Colonization in the Atlantic World, 1650–1800* (Cambridge: Cambridge University Press, 2015); and Kazuo Kobayashi's PhD Thesis: http://blogs.lse.ac.uk/southasia/2013/06/27/indian-cotton-textiles-in-the-eighteenth-century-atlantic-economy/.

23 S. Axelrod Winsnes (ed.), *A Reliable Account of The Coast of Guinea (1760) by Ludewig Ferdinand Rømer* (Oxford:

and had a long experience of wearing Indian cottons that reached them via trans-Saharan routes.

No less demanding were North and Latin American consumers. Already in 1700 the colonies in North America were supplied with Indian calico quilts exported from London to places such as New York, Pennsylvania, and Virginia. By the mid-eighteenth century various types of cotton textiles ('Blue', 'India', 'Negro' as well as printed and painted) were exported from England to the American colonies.[24] 'Casta paintings' (representing the ethnic mix of the Spanish American population) depict men, women and children wearing a variety of high-quality brightly-coloured Indian chintzes and calicoes.[25] Indian cottons were commonly used in menswear as confirmed in paintings and inventories. Cottons included locally-produced textiles (probably of lower quality), canequin (imported from India) and other imported varieties.[26]

The Potential of Cotton: Ecology and Environment

This expanding system of trade and the changes in consumption patterns that it produced across the world have made some historians conclude that cotton cloth was the first modern commodity.[27] This is a somewhat premature conclusion if we do not consider the consequences caused by the consumption of cottons on a global scale. The production system that supported such enormous trade was based on a patchwork of productive specialisations of localities in the Indian subcontinent. Each of the four main coastal areas of India (Gujarat, the Malabar Coast, the Coromandel Coast, and Bengal) produced a wide range of products destined to specific markets not just in India but across the Indian Ocean and eventually – as we have seen – across the entire world. This structure of production had slowly emerged over the centuries and was characterised by: a) rural – often household spinning performed by women; b) weaving performed by men in weaving villages; c) finishing performed in key centres of trade and manufacture; and d) peasant production of raw materials. Trade in raw cotton was not unknown in early modern India but most of the localities (such as Dacca, a centre for high-quality muslin) relied on supplies from their own hinterland.[28] For sure, there was no intercontinental trade of raw cotton or even pan-Asian trade. The longest distance travelled by raw cotton was from the south to the north of the vast Chinese empire, but like in India, cotton remained a peasant crop. So was the case in the Middle East, West Africa and indeed pre-Columbian America, where New World varieties

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Diasporic Africa Press, 2000), 191.

24 Riello, "Globalization of Cotton Textiles," 284.

25 Abby Sue Fisher, "Mestizaje and the Cuadros de Castas: Visual Representations of Race, and Dress in Eighteenth Century Mexico" (Unpublished Ph.D. Thesis, University of Minnesota, 1992), 66-7.

26 Beatriz Ricardina de Magalhães, "A Demanda do trivial; vestuário, alimentação e habitação," *Revista Brasileira de Estudos Políticos*, 65 (1987), 172-73.

27 Riello, "Globalization of Cotton Textiles."

28 Riello, *Cotton*, ch. 4.

of cottons were cultivated.[29]

The only area of the world that never cultivated large quantities of cotton was Europe. Some cotton was cultivated in the Mediterranean Islands of Crete, Malta and Sicily and in Southern Spain and later the Balkans, but this was poor-quality fibre produced in small quantities. It did not mean however that cotton textile production was absent from Medieval Europe. Northern Italy and Southern Germany became in the thirteenth and fourteenth centuries important areas of production of a cloth called 'fustian' a mix of cotton and linen.[30] The cotton used for the weft of this cloth was imported from the Middle East, in particular from Syria and Lebanon.[31] Cotton was a substantial part of the trade of the merchants of Venice who sold it in turn to manufacturers in the northern Italian and German cities.[32] By the sixteenth century other areas of Europe such as the Flanders, northern France and England produced their own fustian cloths. An early seventeenth-century English commentator explained that in Lancashire textile manufacturers bought "cotton wool in London that comes first from Cyprus and Smyrna, and at home work the same, and perfect it into fustians, vermilions, dimities, and other such stuffs, and then return it to London, where the same is vented and sold, and not seldom sent into foreign parts, who have means, at far easier terms, to provide themselves of the said first materials".[33]

Over the period c. 1300 to c. 1700, Europe had manufactured small quantities of mixed linen-cotton (fustians) by importing raw cotton from the Levant. The rise and decline of different cotton 'proto-industrial' areas of Europe showed the weakness of relying on a raw material that was totally imported. This was unique compared to any other manufacturing sector of the European economy and was also one of the limits of Europe in developing a viable cotton textile industry. Alternative sources of supplies had to be found. Far too expensive and bulky to import it in large quantities from distant Asia, over the seventeenth century Europeans developed cotton plantations in the Americas. They used the labour of slaves that they bought on the coasts of West Africa in exchange for beads, metals, weapons and most of all textiles. Cotton cultivation in the New World was not an immediate success. Small quantities of cotton from New Spain reached Europe in the late 1560s and some Brazilian cotton early in the following century, but before the 1620s hardly any American cotton was cultivated to be exported to Europe.[34] Cotton cultivation was first practiced in

29 Andrew M. Watson, "The Rise and Spread of Old World Cotton," in Veronika Gervers (ed.), *Studies in Textile History in Memory of Harold B. Burnham* (Toronto: Royal Ontario Museum, 1977), 355-68.

30 Maureen Fennell Mazzaoui, *The Italian Cotton Industry in the Later Middle Ages, 1100-1600* (Cambridge: Cambridge University Press, 1981); id., "The First European Cotton Industry: Italy and Germany, 1100-1800," in Riello and Parthasarathi, *Spinning World*, 63-88.

31 Janet L. Abu-Lughod, *Before European Hegemony: The World System, A.D. 1250-1350* (Oxford and New York: Oxford University Press 1989), 235.

32 Frederic C. Lane, 'Ritmo e rapidità di giro d'affari nel commercio veneziano del quattrocento', in *Studi in Onore di Gino Luzzatto* (Milan, 1949), vol. 1, 258-59.

33 Roberts, *Treasure of traffic* (1641), 32-33. Cit. in William H. Price, "On the Beginning of the Cotton Industry in England," *Quarterly Journal of Economics*, 20: 4 (1906), 608.

34 Eufemio Lorenzo Sanz, *Comercio de España con América en la época de Felipe II* (Valladolid: Servicio de Publicaciones de la Diputación Provincial de Valladolid, 1979), 628; Kristoff Glamann, "European Trade 1500-1750," in *The Fontana Economic History of Europe* (London: Fontana, 1971), vol. 2, 27.

Barbados in the 1620s spreading to the Bahamas islands in the following decade.[35] Over the next half a century cotton made inroads into most of the West Indies, its cultivation being first practiced in Jamaica in the 1670s. Cotton cultivation also reached mainland North America, arriving in Virginia in the late 1640s and South Carolina in the mid-1660s.[36]

The slow diffusion of cotton cultivation in the Americas can be explained by the fact that cotton competed against sugar and that the latter was a rather remunerative crop. Cotton was instead bulky and of relatively low value, one early eighteenth-century commentator noticing how "were it not that by screws and engines they can make a great deal (of raw cotton) lie in a small room, the freight would be so chargeable, that it would not be worth bringing hither raw; but they will press it so hard, as to make the timbers of the ship crack".[37] Cotton was therefore initially cultivated on marginal land and only when European demand for this raw material increased in the course of the eighteenth century, was a cotton plantation system developed in the West Indies and later Brazil. American cotton was an important raw material not just for the British cotton industry but also for the developing French one. The import of raw cotton from the Antilles increased from just 30 tons in 1730 to 650 tons in 1740.[38] England imported cotton from the West Indies and from the 1780s also from Brazil.[39]

The harsh conditions and suffering of the enslaved labour force have been the topic of several scholarly studies.[40] Less attention however has been paid to: a) the ecologic consequences of Europe switching from the production and consumption of linen and woollens (the first derived from two vegetable fibres - hemp and flax - and the other from an animal fibre) to cotton (a vegetable fibre); and b) the environmental consequences brought about by the intensification of cotton cultivation in the Americas.

With hindsight the success of cotton manufacturing in Europe might appear something well understood by contemporaries. Yet, as late as 1751, a Committee of the British House of Commons concluded that cotton was "only a temporary Thing".[41] Cotton was seen as a

35 Barbara Gaye Jaquay, "The Caribbean Cotton Production: An Historical Geography of the Region's Mysterious Crop" (Unpublished Ph.D. Thesis, Texas A&M University, 1997), 60-1.

36 For an overview see: M.B. Hammond, *The Cotton Industry: An Essay in American Economic History. Part I. The Cotton Culture and the Cotton Trade* (New York: American Economic Association, 1897), 4-5; Frederick C. Knight, *Working the Diaspora: The Impact of African Labor on the Anglo-American World, 1650-1850* (New York: NYU Press, 2010), 76-83.

37 J. Houghton, *Husbandry and Trade Improv'd: Being a Collection of many Valuable Materials Relating to Corn, Cattle, Coals, Hops, Wool, &c.* (London, 1727), 136.

38 Pierre H. Boulle, "Merchandises de traite et développement industriel," *Revue Française d'Histoire d'Outre-Mer*, 62 (1975), 317.

39 James Lang, *Portuguese Brazil: The King's Plantation* (New York: Academic Press, 1979), 185.

40 On slavery and cotton plantations see in particular: Douglas C. North, *The Economic Growth of the United States, 1790-1860* (Englewood Cliffs: Prentice-Hall, 1961); Robert W. Fogel and Stanley L. Engerman, *Time on the Cross: The Economics of American Negro Slavery* (Boston: W. W. Norton & Company, 1974); Robert W. Fogel, *Without Consent or Contract: The Rise and Fall of American Slavery* (New York: W. W. Norton & Company, 1989); Gavin Wright, *Slavery and American Economic Development* (Baton Rouge: Louisiana State University Press, 2006).

41 *Report Relating to Chequered and Striped Linens* (1751), 293. Cit. in Beverly Lemire, "Transforming Consumer Custom: Linen, Cotton, and the English Market, 1660-1800," in Brenda Collins and Philip Ollerenshaw (eds.), *The European Linen Industry in Historical Perspective* (Oxford: Oxford University Press and Pasold Research Fund, 2003), 198.

cheap substitute for flax which was becoming increasingly expensive. Cotton turned out however to be a permanent feature of most European economies and a cause of enormous economic change. In Britain, between 1785 and 1830 cotton textile production expanded thirty fold. The workforce employed in this industry was as large as 800,000 already in 1806. Thanks to cotton, small villages like Bolton, Oldham and Manchester had by the 1820s grown to be large industrial towns. This was just the beginning as the industry doubled in size in the 1820s and again in the 1830s. By the 1840s several continental European countries boasted similar rates of expansion in their cotton industries.

The elasticity of raw material supplies from the Americas allowed this industry to develop at a uniquely rapid rate without substantial real price increases for raw cotton fibres.[42] Cotton was not a free good. As already observed, raw cotton was produced by a complex system of exploitation of labour and land. Both these factors were however external to Europe. I put forward the argument somewhere else for an 'ecologic' understanding of cotton and its cultivations in large 'off-shore' plantations.[43] The argument can be summarised in two main points. The first is based upon a counterfactual world in which cotton did not exist at all or in which it was not produced in the Americas but in Europe. The consequences for Europe would have been massive if it had produced its own raw cotton as it had done for its existing wool, linen and silk industries. . The same could be said of Europe's ability to replace all its cotton cloth with either linen or woollen cloth. Although these are hardly interchangeable, the exercise once again shows that Hobsbawm's 'cotton revolution' could not have happened either by relying on wool or linen, or by having raw cotton produced within Europe's border. It was the link between cultivation and manufacturing that was broken by having the production of raw cotton carried out in plantations in another continent where both land (virgin land) and labour (slave labour) were abundant. It was unprecedented in the history of manufacturing for an entire industry to rely on resources produced in another continent through a dedicated system of production that fed an expanding industry.

There is however a second issue that is often forgotten: the environmental impact of this new transcontinental configuration of production. Cotton cultivation had showed to be elastic and by the third quarter of the eighteenth century, the production of this raw material had become integral to the economies of many West Indian islands. Yet, cotton's potential was not infinite. By the 1780s the cotton crop seemed to be increasingly a victim of drought and insect attacks as a report to the Danish government from the island of S. Croix explained. This was because planters in the attempt to cultivate virgin land had cleared vast parts of unproductive vegetation that surrounded their plantations. This had changed evaporation and increased the power of winds.[44] Most of the West Indian Islands experienced one of the

42 Between 1750 and 1810 European cotton consumption increased between six and eightfold. Paul Bairoch, *Economics and World History: Myths and Paradoxes* (Hemel Hempstead: Harvester Wheatsheaf, 1993), 158.

43 Riello, *Cotton*, ch. 11.

44 G. Tyson Jr., "On the Periphery of the Peripheries: The Cotton Plantations of St. Croix, Danish West Indies, 1735-1815," *Journal of Caribbean History*, 26: 1 (1992), 9-10.

earliest cases of man-made environmental catastrophe: cotton had exhausted the land and there was no more virgin land to be cultivated. In the Bahamas, where cotton production was still more than 600 tons a year in the early 1810s, by 1832 had diminished to just 42 tons.[45]

More cultivable land was however present on the American mainland. It is said that the long-stapled 'Anguilla' cotton was introduced into the United States in 1786 when a certain Roger Kensall, living in the Bahamas, sent some seeds to his business partner James Spalding in Georgia.[46] Over the following decade several planters abandoned the Bahamas to set up new plantations in Georgia.[47] In 1791 the US cotton production was practically non-existent. Ten years later, in 1801, the US exported as much cotton to England as the entire British West Indies. In 1811, the US sold 43.9 million kilograms of cotton to England, 56 per cent of all cotton used by British mills.[48] The rise of what came to be known as "king cotton" continued for the entire first half of the nineteenth century, providing endless supplies to the fastest growing industry in human history.[49]

Two factors explain the enormous growth in US raw cotton production. First, the introduction of a new ginning machine by Eli Whitney in 1794 was as revolutionary for cotton growing as Arkwright's machines were for cotton manufacturing.[50] Whitney's saw-gin was a remedy for the labour intensity of cleaning green-seed cotton. Second, as the US production of raw cotton jumped from 334,000 bales in 1820 to 1.35 million in 1840, Alabama, Mississippi and Louisiana became the new 'cotton states'.[51] Hundreds of thousands of slaves, especially younger and stronger ones, had to leave their communities in Virginia, Maryland, Delaware, South Carolina and Kentucky as they were sold for work on the cotton frontier.

This 'industrialisation' of raw cotton production did not just affect the American South. European manufacturers were keen to find new and cheaper supplies in Africa and Asia. Long-staple American cotton was introduced in Egypt only in 1815 and became a major item of export in the 1830s.[52] Thanks to the decreasing cost of shipping, India became another potential area for cotton cultivation.[53] As part of a British imperial project of exploitation of natural resources, the English East India Company first, and later the British government, encouraged the setting up of cotton plantations (cultivated by waged labour) in

45 D. Gail Saunders, *Slavery in the Bahamas, 1648-1838* (Nassau: Media Publishing, 1985), 27

46 *Ibid*., 26.

47 Howard Johnson, *The Bahamas: From Slavery to Servitude, 1783-1933* (Gainesville: University Press of Florida, 1996), 72.

48 Jaquay, "Caribbean Cotton," tables 10 and 12.

49 Eugene R. Dattel, *Cotton and Race In the Making of America: The Human Costs of Economic Power* (Chicago: Ivan R. Dee, 2009), 30-1. See also Sven Beckert, *Empire of Cotton: A Global History* (London: Vintage, 2015).

50 Henry Hobhouse, *Seeds of Change: Five Plants that Transformed Mankind* (London: Counterpoint, 1985), 187-88.

51 Paul E. Johnson, *The Early American Republic, 1789-1829* (Oxford: Oxford University Press, 2006), 90.

52 Egypt emerged as an important supplier of raw cotton only in the second half of the nineteenth century and in response to the productive crisis caused by the American Civil War. E. J. R. Owen, *The Middle East in the World Economy, 1800-1914: A Study of Trade and Development* (Oxford: I.B. Tauris, 1993), 69.

53 Deschamps, Louis, *Le Coton, études élémentaires sur la plantation, la culture et la production de cet arbuste, par L. Deschamps...* (Paris, 1884?), 70 and 75.

South Asia, a project that came to bear results only after 1860.[54]

Re-weaving the Narrative: Cotton, Modernity and Manufacturing

I put forward the argument that cotton became revolutionary not simply via the application of machinery, but because machinery and cotton *together* allowed for a tremendous expansion of production. This could have not been achieved by any other natural fibre. The revolution in manufacturing in England and elsewhere in Europe stemmed from a search to replace Indian products to satisfy increasingly demanding consumers. It was made possible by abundant raw material supplies from the America. What is now called 'the industrial revolution' was a 'wave of cotton', not a 'wave of gadgets' (to use Ashton's famous expression). If machinery were applied (as eventually they were) to wool or linen, the results would have been much more modest because the elasticity of supply for raw cotton remained very high.

Outcomes – as we know – were prodigious. Cotton, a fibre that in the mid-eighteenth century accounted for a tiny percentage of Europe's textile production, by the early decades of the following century had become the most important textile in the West, characterised by new mechanised and urbanised structures of production. Historically, no other area of the world had ever so radically changed its manufacturing economy, transforming a previously minor sector into the largest of its industries. In Britain where cotton had accounted for just 2.6 per cent of value added in industry in 1770, by 1831 had reached 22.4 per cent.[55]

Historians have written copiously on the process of industrialisation that affected cotton textile production in Europe at the end of the eighteenth century. A series of mechanical inventions starting with John Kay's flying shuttle (1733), and followed by John Wyatt and Lewis Paul's spinning frame (1738), James Hargreaves's spinning jenny (1765, patented 1770), and Richard Arkwright's waterframe (1767, patented 1769) came to 'revolutionise' manufacturing, allowing for the production of cheap and high-quality cotton textiles in Europe.[56] Already in 1793 a committee of the English East India Company commented upon the fact that "The slow Progress of an Indian Manufacture, unaided by Machinery, will require Ten, Twelve, perhaps Fifteen Persons to perform the same Work which a single British Manufacturer can execute, assisted as he is by numerous Inventions and Improvements".[57]

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54 William Sandford, *On Cotton Growing in Turkey and Syria* (London, 1862), 9.

55 N. F. R. Crafts, *British Economic Growth during the Industrial Revolution* (Oxford: Oxford University Press, 1985), 17. Still in 1975 the consumption of cotton alone surpassed that of all other fibres taken together. Douglas A. Farnie, "The Role of Merchants as Prime Movers in the Expansion of the Cotton Industry, 1760-1990," in Douglas A. Farnie and David J. Jeremy (eds.), *The Fibre that Changed the World: The Cotton Industry in International Perspective, 1600-1990s* (Oxford: Oxford University Press and Pasold Research Fund, 2004), 24.

56 Patrick K. O'Brien, "The Micro Foundations of Macro Invention: The Case of the Reverend Edmund Cartwright," *Textile History*, 28: 2 (1997), 201-33.

57 *Report of the Select Committee of the... Directors of the East India Company, Upon the Subject of the Cotton Manufacture of this Country* (London, 1793), 6.

Yet, it is incorrect to read this industrial transition as a new chapter in the history of global transformation, disconnected from what we have seen so far. The trajectory of economic development that produced swathes of factories and chimneys in central and northern England at the end of the eighteenth century, started a long time before in remote islands of the Atlantic, on the coasts of the Indian peninsula and the commercial ports of Southeast Asia.[58] Patrick O'Brien, for instance, although sceptical about the direct contribution of trade on British industrialisation, admits that "without the discoveries and expansion of European power into Asia, Africa, and the Americas… Europe's potential for further and even more rapid advance – based upon indigenously generated science and technology – could have been restrained".[59]

Economic historians in recent years have underlined how industrialization cannot be reduced simply to the application of more efficient technologies but required suitable factor endowments and institutions, and efficient factor and commodity markets.[60] It was the combination of abundant raw materials, new technologies and new markets that allowed the production of good-quality cotton cloth for the first time in Europe.

Perhaps it is worth stepping back to avoid becoming teleological. Opportunities are not necessarily picked up. A question to be asked is therefore why Europeans decided to manufacture cotton cloth in Europe when they had ready access to supplies of cheap Indian cloth. Legislation might have played a part in this as the banning of Indian cloth created an incentive to manufacture similar goods at home. Protected from competition and with easy access to the American and African markets, European entrepreneurs developed a calico printing industry and later, through innovations in spinning and weaving, were able to perform the entire process of production.[61] Yet it was not just a matter of economic protectionism. Indian cotton textiles generated enormous fascination among European craftsmen and entrepreneurs about the ways in which they were made.[62] Late seventeenth-century reports on India such as the memoir by the Frenchmen George Roques included passages on textile spinning and weaving and especially the finishing stages of calico painting and printing.[63]

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58 I.G. Simmons, *An Environmental History of Great Britain from 10,000 Years Ago to the Present* (Edinburgh: Edinburgh University Press, 2001), 144-45.

59 Patrick K. O'Brien, "European Economic Development: The Contribution of the Periphery," *Economic History Review*, 35: 1 (1982), 1-18.

60 See in particular Tirthankar Roy, "Knowledge and Divergence from the Perspective of Early Modern India," *Journal of Global History*, 3: 3 (2008), 361-87. There has been a strong debate around Robert C. Allen's *The British Industrial Revolution in Global Perspective* (Cambridge: Cambridge University Press, 2009) in which he proposes a rather narrow explanation of the phenomenon of industrialization based on technological innovation. This was prompted by wage differentials across different world areas.

61 Giorgio Riello, "Asian Knowledge and the Development of Calico Printing in Europe in the Seventeenth and Eighteenth Centuries," *Journal of Global History* 5: 1 (2010), 1-28

62 Maxine Berg, "Asian Luxuries and the Making of the European Consumer Revolution," in Maxine Berg and Elizabeth Eger (eds.), *Luxury in the Eighteenth Century: Debates, Desires and Delectable Goods* (Basingstoke: Palgrave, 2003), 229.

63 Indrani Ray, "Of Trade and Traders in the Seventeenth-Century India: An Unpublished French Memoir by Georges Roques," in Lakshmi Subramanian (ed.), *The French East India Company and the Trade of the Indian Ocean: a Collection of Essays by Indrani Ray* (New Delhi: Munshiram Manoharlal Publishers, 1999), 1-62.

Additional reasons to manufacture cottons in Europe were triggered by the fact that consumers did not always receive the design and colours that they wanted. Relying on an importation process that took the best part of two years from the moment when orders were placed to when the Indian cloth reached Europe, it was unlikely that cotton could respond to fashion changes of a seasonable nature. Moreover, the Indian producers had little understanding of the tastes and requests of European consumers. A letter from a factor (an employee based in India) of the French East India company explained that the handkerchiefs and other chintzes requested from France would be made according to the design sent to India but that although "we have already ordered them from the calico painters, we won't be able to send them to you soon".[64]

Production in Europe meant the ability to modulate supply and respond to consumer demands. By the late eighteenth century, European producers could manufacture not just calicos and chintzes but also fine muslins. One commentator observed that these changes were brought about by machinery and sufficient supplies of cotton "but also from the circumstance of the foreign growths being best adapted to the fine fabrics of muslins, which have of late made so considerable a progress; and which is so exceedingly important in a national point of view, as to produce in many instances from 5 to 10,000 per cent. on the value of the raw material, *and this for labour alone*".[65] Next to technologies, supplies of raw materials and access to markets were fundamental for the global success of cotton textiles.

Conclusion: Cotton and the Modern World

This paper has argued that the 'modernity' of cotton should not just be interpreted in the commodity's ability to gain global markets in the early modern period. The global appeal of cotton textiles prompted intense import-substitution processes across the world and in Europe as well. This eventually led to a shift (from India to Western Europe) and reconfiguration (from manufacturing to industry) of this key sector in the early modern world economy. Yet this story of industrialisation and divergence between Asia and Europe is also one of restructuring of what we might call a 'global commodity chain', to borrow an expression used by recent contemporary theorisation on commodity analysis (Figure 2).[66] Cotton textiles became the first commodity whose chain was global. The degree of geographic proximity between raw material production and manufacturing as performed in India (what we might call 'The Old Cotton System'), came to be replaced by a new

64 *Correspondance du Conseil supérieur de Pondichery et de la Compagnie, 1726-67, vol. 4: 1744-49*, edited by A. Martineau (Pondicherry: Société de l'Histoire de l"nde Française, 1920-30), 75.

65 *Observations on the Advantages Which this Country Derives from a Free and Unfettered Importation of the Raw Material of Cotton Wool* (London, 1789), 2.

66 See in particular: Steven Topik, Carlos Marichal and Zephyr Frank (eds.), *From Silver to Cocaine. Latin American Commodity Chains and the Building of the World Economy, 1500-2000* (Durham: Duke University Press, 2006); Michael L. Dougherty, 'Theorizing Theory: Origins and Orientations of Commodity Chain Analysis', *Global Studies Journal*, 1: 3 (2008); Jennifer Bair, 'Global Commodity Chains: Genealogy and Review', in Jennifer Bair (ed.), *Frontiers of Commodity Chain Research* (Stanford: Stanford University Press, 2008), 1-15.

transcontinental system in which raw materials from the Americas were used to support locally-concentrated production in Western Europe for global markets ('The New Cotton System'). This, however, had enormous consequences not just in Western Europe (the rise of a factory system and industrialisation) but also in the Americas (plantation system, slavery, ecologic impasses, etc.), and in Asia (de-industrialisation and market expansion).

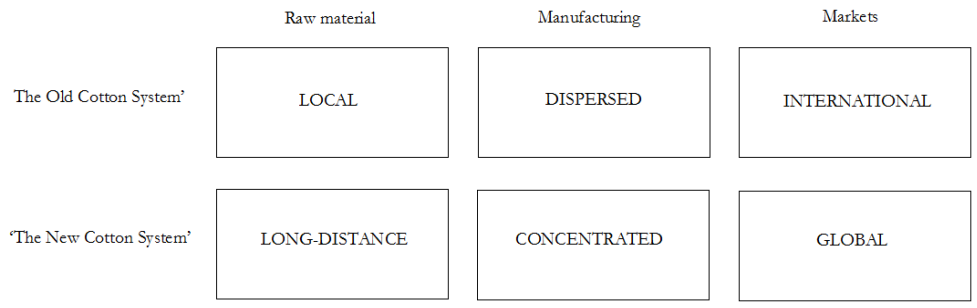

Figure 2. The 'Old' and 'New' Cotton Systems.

Why Did They Admire the Machinery? Rethinking Intellectuals' View from the Perspective of the Competition between English Cotton Goods and Indian Handicraft Ones in the Early Industrial Revolution

Young-Suk Lee*

Abstract. Some intellectuals in the Industrial Revolution considered that the machinery was a mechanism working with the equipment in it. Especially Andrew Ure regarded the self-acting mule as an embodiment of the machinery. Hereafter the expansion of the machinery was considered as an essential feature of the Industrial Revolution for a long time. Machines had actually been used in other regions of the world in the pre-industrial age. In fact, the use of the machinery in Britain could be succeeded to industrialization only on the basis of coal and steam engines. What is the reason that contemporaries during the Industrial Revolution had emphasized the importance of working machines rather than that of the steam engines? This article sheds a new light on their attitudes from the viewpoint of cotton goods competition between India and Britain in the eighteenth century. It seems that contemporaries' exaggeration of working machines was related to their attitude towards Indian cotton goods.

1. Introduction

In 1835 Andrew Ure enumerated the strengths of machine with the following words: "Improvements in the machinery have a three-fold bearing. First, they make it possible to fabricate some articles which, but for them, could not be fabricated at all. Second, they enable an operative to turn out a greater quantity of work than he could before, – time, labour, and quality of work remaining constant. Third, they effect a substitution of labour comparatively unskilled, for that which is more skilled."[1]

At that time, machines gave a strong impression on the minds of contemporaries such as Ure, Charles Babbage, and Edward Baines[2] who had considered that the machinery was a mechanism working with the equipment in it. Ure among them accurately explained the structure of the spinning machines such as the jenny, the water-frame and the mule. Especially the self-acting mule improved in the 1820s was regarded as an embodiment of the machinery which could provoke the economic development during the period of the Industrial Revolution. Hereafter the expansion of the machinery and factory system were considered as essential features of the Industrial Revolution for a long time.

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1 Andrew Ure, *The Philosophy of Manufactures* (1835; London: Cass, 1967 edn.), 30.

2 Charles Babbage, *On the Economy of Machinery and Manufactures* (1832; New York: Kelly, 1971 edn.); Ure, *Philosophy of Manufactures*; Edward Baines, *History of Cotton Manufacture in Great Britain* (1835; Lodnon: Cass, 1966 edn.).

Nowadays, however, revisionists argue that the Industrial Revolution had progressed in an unspectacular and modest mode, and the term is a myth or a misnomer.[3] According to revisionists, the technology in the Industrial Revolution was not dramatically changed enough to open a new epoch. Rather, some technical innovations spread out with a slow pace. Technical progress did not substitute for handicraft even until the mid-nineteenth century, which means that most industries in the Industrial Revolution were prospering on the basis of handicraft manufacturing.[4]

Some contemporaries' views on machines are believed to have influence on the formation of revolutionist interpretation on the Industrial Revolution. Ure classified the machinery consisting of various kinds into three types: "machines concerned in the production of power, ones concerned in the transmission and regulation of power, and ones to modify the various forms of matter into objects of commerce."[5] He especially focused not on the first type of the machinery -power engines- but on the last one – working machines – developed in the Industrial Revolution. Why did those contemporaries overestimate the role of the working machine in the productive process, and why were they addicted to the machinery?

Britain was not a unique country in which the machinery was used. Though some historians regard the machinery as the essence of the Industrial Revolution, actually machines had been used in other regions of the world such as Europe or China in the pre-industrial age. While labourers in other regions did not use machines consistently, only British workers handled machines, including steam engines, to increase their productivity in the late eighteenth and early nineteenth centuries. Recently some historians focus on the role of the machinery in the Industrial Revolution, but unlike the former revolutionists, they also turn their eyes to steam engines or coal which made the machinery broadly and consistently used as the key factor of the Industrial Revolution.[6]

Why did some intellectuals during the Industrial Revolution emphasize the importance of the spinning machine rather than that of the steam engine? Considering that their attitudes are not estranged to the rise of revolutionists' views on the Industrial Revolution, in this article I would shed a new light on their attitudes from the viewpoint of cotton goods

3 P. K. O'Brien, "Introduction: Modern Conception of the Industrial Revolution," in P. K. O'Brien and R. Quainault, eds., *The Industrial Revolution and British Society* (Cambridge: Cambridge University Press, 1993), 1; M. Fores, "The Myth of a British Industrial Revolution," *History*, 66 (1981), 181-98; R. Cameron, "A New View of European Industrialisation," *Economic History Review*, 2nd ser., vol. 38, no. 1 (1995), 1-23; D. N. McCloskey, "The Industrial Revolution: A Survey," in R. Floud and D. N. McCloskey, eds., *The Economic History of Britain Since 1700,* vol. 1 (Cambridge: Cambridge University Press, 1981), 103.

4 For this aspect, see Raphael Samuel, "The Workshop of the World: Steam Power and Hand Technology in Mid-Victorian Britain," *History Workshop Journal,* no. 3 (1976), 6-72.

5 Ure, *Philosophy of Manufactures*, 27.Babbage's classification is also similar to that of Ure. Babbage very similarly says as follows: "The machinery may be classed as; First, those which are employed to produce power, and as, secondly, those which are intended merely to transmit force and execute work." Babbage, *On the Economy of Machinery and Manufactures*, 6.

6 E. A. Wrigley, *Continuity, Chance and Change: The Character of the Industrial Revolution in England* (Cambridge: Cambridge University Press, 1988); R. C. Allen, *The British Industrial Revolution in Global Perspective* (Cambridge: Cambridge University Press, 2009). Especially, for the theory of biased technological progress which is recently noticed, see R. C. Allen, "Why was the Industrial Revolution British?," *Oxonomics*, no. 4 (2009), 50-54.

competition between India and Britain in the late eighteenth century.

2. The Spinning Machine and Indian Cotton Textiles

It is well-known to us how the history of innovations in the cotton industry had been developed. As cotton yarns shortage had steadily demanded the necessity of innovations of spinning in the cotton industry since the introduction of John Kay's flying shuttle in 1733, craftsmen came to try various spinning machines such as the jenny, the water-frame and the mule to cope with this situation. While the cotton industry had become the most important sector of manufacturing fields in Britain since the 1790s, some intellectuals were deeply impressed to the fact that new machines could produce fine yarn to compete with Indian yarn. For example, Ure who became known as a protector of the factory system highly appraised Arkwright's water-mill at Cromford which had begun to spin finest yarn.

> When the first water-frame for spinning cotton were erected at Cromford, in the romantic valley of the Derwent, about sixty years ago, mankind were little aware of the mighty revolution which the new system of labour was destined by Providence to achieve, not only in the structure of British society, but in the fortunes of the world at large. Arkwright alone had the sagacity to discern, and the boldness to predict in glowing language, how vastly productive human industry would become, when no longer proportioned in its results to muscular effort, which is by its nature fitful and capricious, but when made to consist in the task of guiding the work of mechanical fingers and arms, regularly impelled with great velocity by some indefatigable physical power.[7]

When severe critics published the critical books on the machinery and factory system in the early 1830s, factory owners needed to defend them against those attacks. Intellectuals' writings including Ure's were the result of this situation. Of course, it is also important for Ure to emphasize the importance of steam engines in the factory system. He analyzed the nature of the factory system from two perspectives: collective human labour and machines.

> The term Factory, in technology, designates the combined operation of many orders of work-people, adult and young, in tending with assiduous skill a system of productive machines continuously impelled by a central power…. But I conceive that this title, in its strictest sense, involves the idea of a vast **automaton**, composed of various mechanical and intellectual organs, acting in uninterrupted concert for the production of a common object, all of them being subordinated to a self-regulated moving force.[8] (my bold)

In the passage above, Ure first describes the factory as "a combined operation" of factory workers, which means that the automaton is only an object and the worker is the subject of

7 Ure, *Philosophy of Manufactures,* 14-15.

8 Ure, *Philosophy of Manufactures*, 13. After K. Marx cited this paragraph in the first volume of his *Das Kapital*, it became well known to historians and intellectuals in the world.

the productive process. Ure also represents the factory as "a vast automaton" meaning the subject of the production.[9] Does the term "automaton" include the power engine and the working machine in itself? Ure's automation seems to mean an automatic machine controlling all process of the production such as the self-acting mule. This automaton would, above all, need steam power for the purpose of its own continuous operation. But what was the most important to him was the mechanism of the self-acting in itself. Ure explains the mechanization of spinning process in the first part of his book, introducing the self-acting mule as an embodiment of automaton. He thought that the self-acting mule was "a machine which apparently became instinct with the thought, feeling, and tact of the experienced workman – which even in its infancy displayed a new principle of regulation, ready in its mature state to fulfill the functions of a finished spinner." The machine was called 'Iron Man' among workmen: "The Iron Man sprung out of the hands of our modern Prometheus at the bidding of Minerva."[10]

Some contemporaries appraised the spinning machines with patriotically biased attitudes towards the competition between Indian cotton textiles and English ones in the late eighteenth century. Baines, for example, talks about some advantages for the cotton manufacture in England. He points out water-power, fuel, iron, mild temperature, with "a hardy race of men". Although England was the last country to make efforts for the development of the cotton industry in Europe, it could overtake the other countries in the production of cotton textiles.[11]

To be unbiased from British patriotism, the use of machines should be understood on the basis of Britain's relation to modern world history. Edward Baines explains the reason why the machinery was first introduced into the field of cotton spinning with his massive information on the history of British cotton industry. According to him, the spread of the machinery should be understood from the perspective of the formation of the international network which began from the sixteenth century. Especially in the seventeenth and eighteenth centuries, American plantation owners imported African slaves for the labour in the plantations of sugar, tobacco and cotton, and English merchants also imported Indian cotton textiles for slaves' clothes because of the good qualities with low prices of those textiles, comparing to that of Britain. Indian cotton textiles became very popular among European people.[12] Europeans' enthusiasm about Indian cotton goods is clearly shown in Baines' following phrase:

> Owing to the beauty and cheapness of Indian muslins, chintzes, and calicoes, there was a period when the manufacturers of all the countries of Europe were apprehensive of being

9 On the two aspects, see Simon Schaffer, "Babbage's Intelligence: Calculating Engines and the Factory System," *Critical Inquiry*, vol. 21 (Autumn, 1994), 223; Steve Edwards, "Factory and Fantasy in Andrew Ure," *Journal of Design History*, vol. 14, no. 1 (2001), 20-21.

10 Ure, *Philosophy of Manufactures*, 367.

11 Baines, *History of Cotton Manufacture in Great Britain*, 85, 88.

12 For the increase of the consumption of Indian cotton textiles in America and Europe, See Giorgio Riello, *Cotton: The Fabric that Made the Modern World* (Cambridge: Cambridge University Press, 2013), chs. 6-9.

> ruined by their competition. In the seventeenth century the Dutch and English East India Companies imported these goods in large quantities; they became highly fashionable for ladies' and children's dresses, as well as for drapery and furniture, and the coarse calicoes were used to line garments.[13]

After the 1690s, Indian cotton textiles such as muslin, calico or chintz were so popular in England. Cotton yarns and textiles produced in England were not good enough to compete with Indian textiles. With the overflowing Indian cotton textiles, the woolen industry of Britain came to face with a threat. The first discontented voice burst against the importation of Indian goods in 1678, and the acts banning the importation of Indian textiles were submitted in the parliament for the purpose of the protection of Britain's domestic industry around Manchester. After the mass protest, the parliament imposed excise duties on Indian textiles by several times.[14]

As British manufacturers focusing on the handicraft skill could not get over the competitive power of Indian textiles, they should get over the ordeal by finding a breakthrough, and inventing machines for spinning came to be an alternative under this situation. Now, it is easy to infer why intellectuals during the Industrial Revolution were fascinated by spinning machines.

3. British Contemporaries' Views on the Indian Handicraft Industry

In eighteenth-century India, the Gujarat region was one of the most important centres that had produced cotton textiles and exported those to other regions. The main exports of the region were based on the manufacture of cotton textiles. At that time cotton production in India was similar to the putting-out system of European countries. Although spinning and weaving were carried on each family as a subsidiary industry, some brokers supplied the materials for production while others offered advances within an agricultural society.[15]

In 1613, calico was imported into England at auction by the East India Company, and the cotton goods were able to compete with English ones because they were cheaper than linen cloth of England. By 1684, clothes imported by the company amounted to 1.5 million pieces.[16] According to K. N. Chaudhuri, India had been the largest cotton-goods manufacturer of the world before England put to use the spinning or the weaving machines.

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13 Baines, *History of Cotton Manufacture in Great Britain*, 77. Baines describes Indian cotton textiles based upon especially the writings of Jean-Baptiste Tavernier, a French traveler in the 17th century. In 1676, Tavernier praised Indian muslin as follows: "Muslin is so fine that you would scarcely know what it was that you held in your hand. …A lady was surprised at seeing a thread so delicate, which almost escaped the view." J. B. Tavernier, *Travels in India*, trans. V. Ball (London: Humphrey Milford, 1925), 6.

14 For example, in 1712 the parliament imposed an excise duty of 3d. per square yard on calicoes [10 Anne, c. 19], and in 1714 the duty was raised to 6d. per square yard [12 Anne, sec. 2, c. 9]). See Baines, *History of Cotton Manufacture in Great Britain*, 105.

15 Jack Goody, *The East in the West* (Cambridge: Cambridge University Press, 1996), 93.

16 Goody, *The East in the West*, 115.

Indian cotton goods dominated not only the overseas market in Asia and Africa for a long time, but also Europeans were attracted to the Indian cottons in the eighteenth century.[17] Baines knew that cotton was widely cultivated in most regions in India, not a specifically limited region. He said "the cotton manufacture in India is not carried on in a few large towns, or in one or two districts; it is universal. The growth of cotton is nearly as general as the growth of food; everywhere the women spend a portion of their time in spinning; and almost every village contains its weavers, and supplies its own inhabitants with the scanty clothing they require."[18]

As Indian domestic manufactures were carried with the simplest tools, the Indian cotton industry did not require large capital, the apparatus of mills, or even an assemblage of various trades. Indian domestic labourers separated raw cotton from the seeds by a small rude hand-mill, or gin, turned usually by women. The hand-mill consisted of two wooden rollers. The cotton was put in at one side, and drawn through by the revolving rollers. The next operation was bowing raw cotton to clear from dirt and knots. After that, spinning and weaving were operated by adult labourers.[19] Indian workers could produce fine cotton goods in spite of their primitive tools and apparatus. Indian cotton textiles could maintain far better quality than of European ones because Indian women used only their fingers to spin fine yarn. Baines mentioned his admiration for their skill several times in his book.

> The cotton being thus prepared, without any carding, it is spun by the women. the coarse yarn is spun on a heavy one thread wheel, and the finer yarn is spun with a metallic spindle, sometimes with a distaff.... In this simple way the Indian women, whose sense of touch is most acute and delicate produce yarns which are finer and far more tenacious than any of the machine-spun yarns of Europe.[20]

> The women spin the thread destined for the cloth, and then deliver it to the men, who have fingers to model it as exquisitely as these have prepared it. The rigid, clumsy fingers of a European would scarcely be able to make a piece of canvas with the instruments which are all that an Indian employs in making a piece of muslin. It is further remarkable, that every distinct kind of cloth is the production of a particular district, in which the fabric has been transmitted perhaps for centuries from father to son, – a custom which must have conduced to the perfection of the manufacture.[21]

In addition to the handicraft, Indian textile competitiveness came from well-developed agriculture. Indian agriculture was so productive that the food price was lower than that in Europe. At least, until the eighteenth century, India had kept agriculture productive, which meant the country could keep the labour price low. Competitiveness in the cotton manufacture was the result of these two conditions.

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17 K. N. Chaudhuri, *The Trading World of Asia and the English East India Company, 1660-1760* (Cambridge: Cambridge University Press, 1978), 237.

18 Baines, *History of Cotton Manufacture in Great Britain*, 65.

19 Baines, *History of Cotton Manufacture in Great Britain*, 66.

20 Baines, *History of Cotton Manufacture in Great Britain*, 68.

21 Baines, *History of Cotton Manufacture in Great Britain*, 74.

It is said that intellectuals in the Industrial Revolution, especially Ure talked about capital's control of the labour process against workers' resistance.[22] After he concluded workers' hands were not efficient for the production, Ure insisted that the production method by hand of labour in the factory system would be discarded and replaced by machines. This means that Ure emphasized "machines to modify the various forms of matter into objects of commerce," rather than power machines or steam engines. Why did he consider workers as inefficient instruments? The grand purpose of the factory system is, through the union of capital and science, to reduce the task of workers. In other word, the principle of the factory system is to replace skillful hands with accurate mechanism. In his book, Ure reiterates the substitution of hands with machines several times.

> Manufacture is a word, which, in the vicissitude of language, has come to signify the reverse of its intrinsic meaning, for it now denotes every extensive product of are, which is made by machinery, with little or no aid of the human hand; so that the most perfect manufacture is that which dispenses entirely with manual labour.[23]

> It is, in fact, the constant aim and tendency of every improvement in machinery to supersede human labour altogether, or to diminish its cost, by substituting the industry of women and children for that of men; or that of ordinary labourers, for trained artisans.[24]

Indian cotton textiles eroded the woolen market share in late eighteenth-century Britain, because for a long time, domestic labourers could not spin as fine cotton yarn as Indian yarn. It was in the late 1770s that Arkwright's water frame could produce fine cotton yarn comparable with the Indian yarn. Contemporaries' appraisal of Arkwright originated from the fact that Britain finally came to produce competitive cotton textiles thanks to him. Contemporaries' disappointment of hands seems to have brought out two results: overestimation of working machines and distrust of hands. Ure was a representative of intellectuals who strongly expressed the trend in that period.

It should be emphasized, however, that spinning machines could play an important role in production only when a new power machine, that is, the steam engine could help them. It is in this aspect that the Industrial Revolution is different from other mechanization in the former age. Ure thought spinning machines, not steam engines itself, especially the self-acting mule, was of more importance. Thanks to Ure's perspective on the mule, intellectuals after him came to emphasize on the machinery and the factory system, and their view led to the revolutionist interpretation. In short, contemporaries' attitudes towards industrialization were deeply involved in their consciousness towards Indian textiles, broadly speaking, India.

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22 See Edwards, "Factory and Fantasy in Andrew Ure," 20.
23 Ure, *Philosophy of Manufactures*, 1.
24 Ure, *Philosophy of Manufactures*, 23.

4. Rethinking the Industrial Revolution

Though traditional historians have regarded the Industrial Revolution as a definite watershed in British history, the current interpretations are dominated by gradualists' views that its process was unspectacular and modest. Gradualists also suggest the causes and factors different from those of traditional historians. The dispute between the two groups derives from the fact that while the revolutionists seek the process of the Industrial Revolution only from the perspective of the domestic history, the gradualists focus on the comparison between British industrialization and others' one.

The importance of working machines stemmed from Adam Smith's theory of division of labour. He, through case of pin-makers, demonstrates the possibility of improvement of productivity on the basis of the division of labour. Though the growth of productivity by the division of labour and by the use of machines may be very substantial, however, it is also a limited explanation. The machinery was also invented in other regions in the pre-industrial age. In the traditional society like China, intellectuals and craftsmen invented some elaborate machines for agriculture, water pumping, or military use. But they were not consistently used among the working people. While spinning machines were connected with steam engines in Britain, this kind of working machines did not occur to increase the productivity in other countries, which made the big difference between Britain and other countries especially in the late eighteenth century. In short, what was important is the continuous use of machines, not the invention of machinery.

In the early stage of the Industrial Revolution, it might not be easy to connect the spinning machine and the steam engine technically. At that time, most spinners and manufacturers operated their spinning machines by hand or with water-wheels. It was from the early 1790s that spinning mules powered by steam engines began to be installed in factories. However, it should not be overlooked the fact that steam engines and coal were more important than working machines in the Industrial Revolution. Recently K. Pomeranz called abundant coal in Britain "geographical good luck," comparing the English economy with the Chinese one in the late eighteenth century.[25] Should we, here, also admit Pomeranz's "geographical good luck"? From the Tudor period the English began to use as household fuel coal which had been dug out in Northern England such as Lancashire or Newcastle. On 9 January 1684 John Evelyn wrote in his diary as:

> London, by reason of the excessive coldness of the air hindering the ascent of the smoke, so filled with the steam of the sea-coal, that hardly could one see across the streets, and this filling lie lungs with its gross particles, exceedingly obstructed the breast, so as one could scarcely breathe. Here was no water to be had from the pipes and engines, nor could the brewers and divers other tradesmen work, and every moment was full of

25 Kenneth Pomeranz, *The Great Divergence: China, Europe, and the Making of the Modern World Economy* (Princeton: Princeton University Press, 2000), 12, 66.

disastrous accidents.[26]

In Dr. Johnson's age, Londoners considered coal as one of the most important commodities, and the considerable quantity of coal was consumed for domesticity and industry. Every year the amount of coal mining reached between 600,000 and 700,000 tons, and in the late eighteenth century the amount rapidly increased.[27]

In the late 1980s, E. A. Wrigley said that coal was only "a cheap substitute for wood as a source of heat energy." The increase of the amount of coal mining was the most important factor among numerous factors for the Industrial Revolution, and sometimes coal was used for the smelting of iron ore in Britain.[28] Historians having searched for major factors of the Industrial Revolution over a century, they did not come up with convincing answers. A scholar even distrusted the effort to prioritize the listed factors. The phrase that the British industrialization would be a kind of "probability problem" implies how hard to get satisfied answers from the studies on the Industrial Revolution.[29] But some intellectuals in the age of the Industrial Revolution had already realized the importance of coal. For example, J. R. M'cCulloch emphasized coal in his review of Ure's *Philosophy of Manufactures*. According to him, Ure elaborated on mechanical properties of the machinery installed in factories, but his explanation in detail is another obstacle for general readers to understand his book. If a reader wants to know why the English factory system did not happen in other countries such as France or Austria, he cannot get contented answers from Ure's book. Ure missed the most important fact due to his overstatement of the self-acting mule.[30] Of importance was coal.

> But of all the physical circumstances that have contributed to our wonderful progress in manufacturing industry, none has had nearly so much influence as our possession of the most valuable coal mines. These have conferred advantages on us not enjoyed in an equal degree by any other people. Even though we had possessed the most abundant supply of the ores of iron and other useful metals, they would have been of little or no use, but for our almost inexhaustible coal mines.[31]

In recent years, historians began to pay attention to the theory of the biased technological progress of R. C. Allen[32] who connected technological factors to institutional and cultural

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26 John Evelyn, *Diary and Correspondence of John Evelyn*, ed. William Bray (London: Henry Colburn, 1850), vol. 2, 193.

27 Dorothy Marshall, *Dr. Johnson's London* (New York and London: Wiley & Sons, 1968), 59.

28 Wrigley, *Continuity, Change and Chance*, 78, 80-81.

29 N. F. R. Crafts, "Industrial Revolution in Britain and France: Some Thoughts on the Question 'Why Was England First?'," *Economic History Review*, 2nd ser., vol. 30, no. 3 (1977), 441.

30 John R. M'cCulloch, "On Baines and Ure," *Edinburgh Review*, vol. 61 (July 1835), 455. Ure was also conscious of the importance of coal. See the following phrase. "There are many engines made by Bolton and Watt, forty years ago, which have continued in constant work all that time with very slight repairs. What a multitude of valuable horses would have been worn out in doing the service of these machines! And what a vast quantity of grain would they have consumed! Had British industry not been aided by Watt's invention, it must have gone on with a retarding pace." (Ure, *Philosophy of Manufactures*, 29). But he usually focused on the efficiency of the self-acting mule.

31 M'cCulloch, "On Baines and Ure," 456.

32 Allen, *The British Industrial Revolution in Global Perspective*.

ones. He considers demand and supply of technical innovations apart. Advanced institutions or culture could increase the supply of technical innovation, but it did not always lead to the increase of demand. The demand of the machinery and steam power in Britain increased under the special economic conditions of the country between the sixteenth and eighteenth centuries. Britain experienced drastic changes such as the agricultural revolution, enclosure movements, proto-industrialization, and the opening of the international trade. British society was urbanized with these changes, and the urban economy developed. High wages and rapid urbanization pushed the price of energy price high to make coal become an alternative for high-priced energy. In short, steam engines and mechanization came out of British conditions such as urbanization, high wages and the high price of energy.[33]

5. Conclusion

In this article, I pointed out that some intellectuals' admiration for working machines would be related to their response towards the Indian handicraft industry. The Indian cotton industry was mainly maintained based upon labourers' hand-skills, while English workers did not imitate it in the early stages of the Industrial Revolution. Perhaps the use of working machines was a result of coping with the superiority of Indian cotton goods. As gradualist historians argued later, working machines were really not good in quality, and spread out in slowness. Some contemporaries' literature on machinery deeply influenced the opinion formation of the next generation, and revolutionists' studies on the Industrial Revolution were formed on the basis of the literature.

It should be emphasized that contemporaries' exaggeration of the machinery and factory system would be related to their attitudes towards India or Indian culture. Their attitude might be formed under the influence of Orientalism. Some intellectuals were apt to overestimate the working machine which substituted for Indian labourers' hand skills, and their views gave a deep influence on the posterity.

33 See Allen, "Why was the Industrial Revolution British?."

Fashion, Textiles and the Origins of Industrial Revolution*

John Styles**

Abstract. This article outlines an argument about the origins of the Industrial Revolution in textiles. It arises from the research project Spinning in the Era of the Spinning Wheel, 1400-1800, a study of spinning in England from the introduction of the spinning wheel during the later Middle Ages to its eclipse by the powered spinning machine early in the nineteenth century. A focus on hand spinning in the centuries before the Industrial Revolution enabled Spinning in the Era of the Spinning Wheel to address issues frequently ignored by economic historians. They have typically dismissed hand spinning as a low-skill, low-productivity, feminised bottleneck to be overcome in the forward march of technological progress, devoting much more effort to understanding the new, mechanical technologies of the Industrial Revolution than the hand techniques they replaced. To avoid this pitfall, the project researched the fibre content of surviving early-modern yarns and fabrics, and explored the relationships between their materiality and their markets. Applying this approach to eighteenth-century linen and cotton textiles generated new perspectives on the origins of the British Industrial Revolution, which challenge currently influential views.

The article offers a re-interpretation of the key textile inventions of the early Industrial Revolution. It critiques influential recent interpretations, particularly those offered by Robert Allen, Joel Mokyr and Joseph Inikori. It presents new evidence about the geographical distribution of hand spinning in the north of England, the fibre content of 'cotton' fabrics, and the markets for eighteenth-century Lancashire 'cotton' textiles. That evidence is used to develop an alternative approach, emphasising the technical and commercial challenges Lancashire manufacturers faced during the 1750s and 1760s in matching the quality of printed Indian calicoes in a key market – the British North American colonies. Richard Arkwright's water frame of 1769 emerges as the decisive macro-invention. It met the quality challenge and laid the foundations for a mass market in cottons. Ironic, then, that the technological precursors of Arkwright's invention were in the luxury silk textile industries of medieval and early modern Europe.

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1. Introduction

This article outlines an argument about the origins of the Industrial Revolution in textiles. It arises from the research project *Spinning in the Era of the Spinning Wheel, 1400-1800*, a study of spinning in England from the introduction of the spinning wheel during the later Middle Ages to its eclipse by the powered spinning machine early in the nineteenth century.[1] A focus on hand spinning in the centuries before the Industrial Revolution enabled *Spinning in the Era of the Spinning Wheel* to address issues frequently ignored by economic historians. They have typically dismissed hand spinning as a low-skill, low-productivity, feminised bottleneck to be overcome in the forward march of technological progress, devoting much more effort to understanding the new, mechanical technologies of the Industrial Revolution than the hand techniques they replaced. To avoid this pitfall, the project researched the fibre content of surviving early-modern yarns and fabrics, and explored the relationships between their materiality and their markets. Applying this approach to eighteenth-century linen and cotton textiles generated new perspectives on the origins of the Industrial Revolution, which challenge currently influential views.

The article begins with a critique of two of the most influential recent interpretations of the British Industrial Revolution in textiles. It then presents new evidence about the geographical distribution of hand spinning in the north of England, the fibre content of 'cotton' fabrics, and the markets for eighteenth-century Lancashire 'cotton' textiles. That evidence is used to develop an alternative approach, emphasising the technical and commercial challenges Lancashire manufacturers faced during the 1750s and 1760s in matching the quality of printed Indian calicoes in a key market – the British North American colonies. Richard Arkwright's water frame of 1769 emerges as the decisive macro-invention. It met the quality challenge and laid the foundations for a mass market in cottons. Ironic, then, that the technological precursors of Arkwright's invention were in the luxury silk textile industries of medieval and early modern Europe.

2. Why Robert Allen's Spinning Jenny is Broken

The late Eric Hobsbawm famously remarked 'whoever says Industrial Revolution says cotton'.[2] Traditional accounts of the British Industrial Revolution tell the story of an Asian textile – cotton – transformed into a cheap, mass-produced British staple by means of cost-cutting mechanical inventions. Indeed, technology was centre stage in Adolphe Blanqui's 1837 *Histoire de l'Économie Politique en Europe*, the book which offered probably the first systematic application of the concept of industrial revolution. Blanqui insisted that Britain had recently undergone an economic revolution comparable to the social

1 http://spinning-wheel.org.

2 Eric Hobsbawm, *Industry and Empire: The Birth of the Industrial Revolution*, London, 1968, 34.

and political revolution experienced in France. In a chapter entitled 'On the economic revolution in England caused by the discoveries of Watt and Arkwright', he defined that economic revolution in terms of technology, or, to be more precise, in terms of just two machines:

> Two machines, henceforth immortal, the steam engine and the spinning machine, overturned the old commercial system and, almost at the same moment, gave birth to material products and social questions unknown to our fathers … Hatched in the brains of Watt and Arkwright, two men of genius, the industrial revolution took possession of England.[3]

Recent quantitative studies of the classic period of the British Industrial Revolution, from 1760 to 1830, have suggested that overall rates of economic growth were significantly lower than had previously been assumed. Yet despite the tendency to downplay the significance of Industrial Revolution for the economy as a whole, economic historians continue to foreground those technological innovations on which the very notion of Industrial Revolution was originally founded. The question of why the crucial technological innovations were British is central to the two most recent (and influential) general treatments of the Industrial Revolution – Joel Mokyr's *The Enlightened Economy: An Economic History of Britain, 1700-1850* and Robert Allen's *The British Industrial Revolution in Global Perspective*.[4] Both books employ a distinction between micro- and macro-inventions, identifying James Hargreaves' spinning jenny and Richard Arkwright's water frame as key macro-inventions in cotton spinning, along with Samuel Crompton's later spinning mule, which integrated the principles of the first two machines. However, the two books provide very different approaches to explaining macro-invention.

Mokyr insists that macro-inventions (in contrast to micro-inventions) are only very weakly related to economic forces, if at all. He presents macro-inventions as radical new ideas that emerge without clear precedent, but have dramatic economic consequences.[5] The roots of the key macro-inventions of the British Industrial Revolution, insists Mokyr, lay in what he calls 'the great synergy of the Enlightenment: the combination of the Baconian program in useful knowledge and the recognition that better institutions created better incentives'.[6] In other words, their origins can be found in a distinctively British combination of competitive markets and scientific research linked to practical applications. Allen, by contrast, offers an explanation for the key macro-inventions rooted in economic incentives, in particular in an economy with high wages, but cheap capital and very cheap energy, which rendered worthwhile the high costs of developing macro-inventions and converting them into commercially useful technologies.

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3 Adolphe Blanqui, *Histoire de l'Économie Politique en Europe*, Vol. 1, Paris, 1837, 207 and 209.

4 Joel Mokyr, *The Enlightened Economy: An Economic History of Britain, 1700-1850*, New Haven and London, 2010; Robert Allen, *The British Industrial Revolution in Global Perspective*, Cambridge, 2009.

5 Joel Mokyr, *The Lever of Riches: Technological Creativity and Economic Progress*, Oxford, 1990, 13.

6 Mokyr, *Enlightened Economy*, 122.

Mokyr's broad emphasis on the importance of 'useful knowledge' is unexceptionable, but in the process he appears to abandon the possibility of explaining the origins of particular macro-inventions, while sidelining evidence for pre-Enlightenment inventiveness. Similarly, Allen's application of a problem-response model of macro-invention is unobjectionable in principle. After all, it has characterized attempts to explain the invention of machine spinning since Thomas Sutcliffe's 1843 *Exposition of Facts Relating to the Rise and Progress of the Woollen, Linen and Cotton Manufacture of Great Britain* associated invention of spinning machinery with the intensified demand for yarn assumed to have resulted from John Kay's invention of the flying (originally known as the wheel) shuttle.[7] Yet neither Mokyr nor Allen cite many recent studies of technological innovation in cotton textiles, principally because they are few and far between. Over the last thirty years the attention of historians of technology working on the eighteenth century has tended to move away from the mechanization of textiles towards technical innovation in motive power, metalwares and ceramics.

Robert Allen, in developing his explanation for technical innovation in textiles, builds his argument around James Hargreaves' spinning jenny, famously invented in Oswaldtwistle, Lancashire in the mid-1760s. In his book and an associated article, Allen offers an elaborate cliometric comparison of the jenny's potential to reduce spinning costs in Britain, France and India.[8] He concludes jennies more than paid for themselves at high British wages for hand spinning, but were not economically advantageous at lower French wage rates, and certainly not at even lower Indian wages. His analysis has been subjected to considerable technical criticism by his fellow cliometricians.[9] However, there are two more profound problems with Allen's argument. The first concerns the evidence on which his calculations are based; the second, his failure to explore the circumstances that generated a demand for the new technique.

Allen's contrast between England and France depends on evidence for low French wages in hand spinning and a correspondingly slow take-up of the spinning jenny in France. He insists that French cotton producers declined to adopt the jenny in any numbers. His evidence is a 1790 French government estimate, which put the number of jennies in the whole of France at only 900, which he contrasts with an estimate of 20,070 jennies for Britain in 1788, almost certainly a considerable exaggeration.[10] He fails, however, to point

7 Thomas Sutcliffe, *An Exposition of Facts Relating to the Rise and Progress of the Woollen, Linen and Cotton Manufacture of Great Britain*, Manchester, 1843, 4-9.

8 Robert Allen, 'The Industrial Revolution in Miniature: The Spinning Jenny in Britain, France, and India', *Journal of Economic History*, Vol. 69, 2009, 901-927.

9 See U. Gragnolati, D. Moschella and E. Pugliese, 'The Spinning Jenny and the Industrial Revolution: A Reappraisal', *Journal of Economic History*, Vol. 71, 2011, 458–63.

10 Allen, 'The Industrial Revolution in Miniature', 914. The figure of 20,070 jennies was supplied to the Board of Trade in 1787 by calico and muslin manufacturers lobbying for protective tariffs. Consequently, there must be a strong suspicion that the figures were inflated, as was so often the case with eighteenth-century lobbying, especially as the number of jennies (of which a large proportion were domestic) would have been so hard to estimate. Richard Arkwright, in another self-interested lobbying exercise only three years before, in 1784, had estimated that there were only 8,000 'common jennies'; R. S. Fitton, *The Arkwrights: Spinners of Fortune*, Manchester, 1989, 211-12.

out that the French estimate was made immediately after the mass machine-breaking riots that accompanied the early months of the French Revolution in the preceding year, 1789. The number of jennies in use in France in the later 1780s was probably much higher. Using the small numbers of jennies reported in 1790 cannot demonstrate that the machine was uneconomic in France.[11]

It was certainly not the view of the French government inspectors of manufactures that the jenny was uneconomic. Louis-Casimir Brown, inspector of manufactures for Picardy, reported in 1779 that the jenny 'combines the advantages 1st of having a yarn of the same degree of twist, 2nd and of a constant fineness, as long as the spinner of the slivers has drawn them out smoothly, 3rd finally it is possible to spin much more'. He provided a detailed breakdown of costs, which indicates a saving over equivalent hand-spun yarn of more than 20%.[12] Eight years later, an evaluation of jennies with 40 spindles spinning cotton at Oissel in Normandy by Jean-Baptiste Goy, the French inspector of manufactures for the Généralité de Rouen, agreed: 'these machines combine the advantages of reducing labour costs a little, with the production of a yarn that is more uniform'.[13]

Allen is lead further astray by his reliance on French spinning wage data derived from Arthur Young, the English agricultural writer who toured France in 1787-9. Oddly, Allen's references are not to Young's own book, *Travels during the Years 1787, 1788, and 1789*, published shortly after his return to England, but to Constantia Maxwell's collection of extracts from it, first published in 1929.[14] Nor does Allen reference the wages Young reported for cotton spinning, but rather Young's averaging of all his observations of spinning earnings across France, including the spinning of flax, hemp, coarse wool, and fine wool, which often paid far less than spinning cotton. Young recorded relatively few observations for cotton spinning wages in France. Those he did report were mainly for Normandy, in the eighteenth century France's counterpart to Lancashire for cotton manufacturing. Country spinners near Le Havre earned 16 sous per day, at Yvetot in the Caux 12 sous per day, at Rouen, described by Young as 'the Manchester of France', 12 sous per day, while good cotton spinners at La Roche-Guyon, to the south-east on the edge of the Normandy cotton spinning zone, earned 12 sous to 15 sous per day. Only at Angers, in Anjou nearly 200 miles to the south-west, did he report lower rates for spinning cotton of 5 sous to 10 sous per day.[15] The 12 sous to 16 sous per day he recorded in Normandy represented 6d. to 8d. a day in English money. That is the mid-range of the 4d. to 10d. a day (assuming a six-day week)

11 See Jeff Horn, '"A Beautiful Madness": Privilege, the Machine Question and Industrial Development in Normandy in 1789', *Past and Present*, Vol. 217, 2012, 149-185.

12 Archives Nationales, Paris, F12/678, report of Louis-Casimir Brown, inspector of manufactures for Picardy, 1779.

13 Archives Nationales, Paris, F12/1365, report of Jean-Baptiste Goy, Inspector of Manufactures for the Generality of Rouen, 1787.

14 Arthur Young, *Travels during the Years 1787, 1788, and 1789*, first edition, Bury St Edmunds, 1792, 503; Arthur Young, *Travels in France during the Years 1787, 1788, and* 1789, ed. Constantia Maxwell, Cambridge, 1950, 311. For the detailed exposition of this aspect of Allen's argument, see Allen, 'Industrial Revolution in Miniature', 910.

15 Arthur Young, *Travels during the Years 1787, 1788, and 1789*, second edition, London, 1794, Vol. 1, 550, 562-5. The second edition provides a table on earnings in manufacturing, not included in the first edition, which specifies spinning wage rates for different areas.

Young had previously recorded at Manchester in 1770.[16] So it is not clear from Young's data that there was any difference in average wages for hand cotton spinning between the key cotton manufacturing districts in England and France during the years jennies were being introduced. The cliometric edifice constructed by Allen to explain international differences in the adoption of the first major spinning innovation of the Industrial Revolution is built on inadequate foundations.

3. Spinning with Arthur Young

Robert Allen's account of the invention of the spinning jenny pays relatively little attention to its timing in the 1760s, or to Oswaldtwistle, the place in the hills between Blackburn and Accrington in Lancashire where it was invented. Allen is confident that high English spinning wages provide sufficient explanation. Spinning wages in Lancashire in the 1760s certainly appear to have been high compared with other parts of England. Between 1767 and 1771, Arthur Young undertook a series of tours across the south, east and north of England, precursors of his French tours during the 1780s. On these journeys he observed agricultural practice and collected the opinions of improving landlords and farmers about farming techniques. The results were published in three books: *A Six Weeks Tour, through the Southern Counties of England and Wales* (1768), *A Six Months Tour through the North of England* (1770), and *The Farmer's Tour through the East of England* (1771).[17] Young was interested not only in agricultural techniques, but more broadly in the rural economy and rural living conditions. According to the title page of his *Tour through the Southern Counties*, it is a book 'describing particularly the present state of agriculture and manufactures', but also 'the prices of labour and provisions in different counties' and 'the state of the working poor in those counties'. As a consequence, Young consistently recorded information about 'the employment of the poor women and children' in many of the places where he stopped to collect data from his local contacts. In the vast majority of cases that employment was spinning, and often Young tells us which fibres the spinners processed and the wages they were paid, whether adults or children.

Young's tours do not furnish a systematic survey of spinning across rural England at the end of the 1760s. His tours bypassed much of the West Country and the places for which he provides detailed information are those where he already had connections, or was able to establish them. Yet Young was admirably systematic in the way he approached his task, asking the same questions in each locality he visited. Usefully he often includes negative findings, although the answers he recorded are not always consistent.[18] Together, Young's

16 Arthur Young, *A Six Months Tour through the North of England*, Vol. 3, London, 1770, 248.

17 Arthur Young, *A Six Weeks Tour, through the Southern Counties of England and Wales*, London, 1768; Arthur Young, *A Six Months Tour through the North of England*, 4 vols, London, 1770; Arthur Young, *The Farmer's Tour through the East of England*, 4 vols, London, 1771.

18 For Arthur Young's surveys, see Liam Brunt, 'The Advent of the Sample Survey in the Social Sciences', *Journal of the Royal Statistical Society: Series D (The Statistician)*, Vol. 50, 2001, 179-89.

three English tours include observations on the availability of women's and children's manufacturing work for almost a hundred places scattered across broad swathes of rural England during a period of less than four years immediately after the invention of the spinning jenny and before its wide diffusion (Figures 1 and 2).

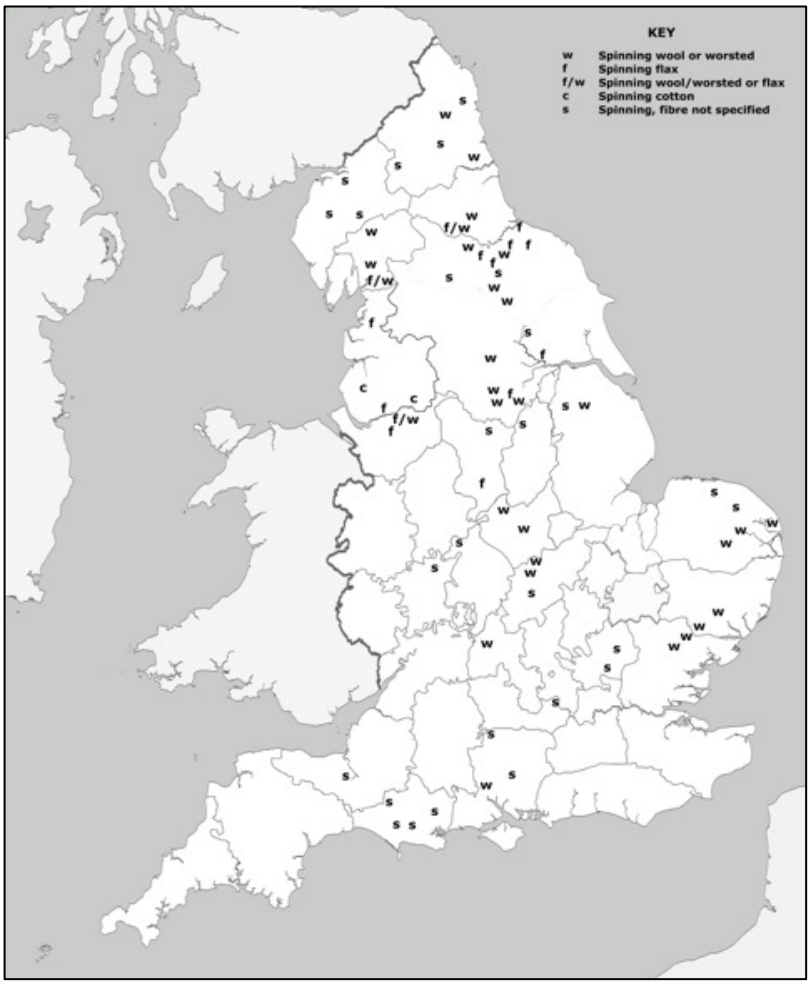

Figure 1. Availability of waged spinning work for women and children, by textile fibre, England, late 1760s.
Source: *Arthur Young's tours of the North, South and East of England, published 1768-71* (see note 18).

Figure 1 maps the different kinds of textile fibre spun in different localities. Short-staple sheep's wool (for woollens) and long-staple sheep's wool (for worsteds) were the most commonly spun fibres, although Young does not always distinguish between them. Cotton appears only twice. Not unexpectedly, both occurrences are in Lancashire.

Figure 2. Adult women's daily spinning wages, England, late 1760s.
Source: *Arthur Young's tours of the North, South and East of England, published 1768-71* (see note 18).

Figure 2 shows those places where Young recorded the wages available to women who spun, as well as showing places where there was no such paid work. Young's observations were, of course, based on estimates by his local patrician contacts, not on actual earnings. Nevertheless, they serve to demonstrate that at a technologically critical period in the later 1760s there were major geographical variations not only in the availability of spinning work, but in the wages it could command. As the Industrial Revolution historiography would predict, higher wages for spinning characterised a zone in the north of England, extending across Lancashire, the western half of Yorkshire, and south Westmorland.

More surprisingly, if we compare Figures 1 and 2, we discover that this north of England high-wage zone was not restricted to cotton spinning, but included spinning flax and, especially, long-staple sheep's wool for worsteds. In other words, in this region in the 1760s the high wages for hand spinning that Robert Allen regards as the key incentive to technical innovation were not confined to cotton. So why was innovation in spinning initially focused

so narrowly on cotton?

The traditional explanation, dating from the mid-nineteenth century and still often repeated today, is that John Kay's flying shuttle, patented in 1733, distorted the relationship between the spinning and weaving processes in cotton manufacture. The flying shuttle, it is argued, increased output per weaver, encouraging the growth of the Lancashire industry. The consequence was unprecedented pressure on the supply of yarn, which still relied on women working at the hand spinning wheel, resulting in rising wages.[19] Yet Edward Baines, like other early historians of the Lancashire cotton industry, acknowledged in 1835 that the flying shuttle 'was not much used among the cotton weavers until 1760', so its affects are unlikely to have been rapid enough to provide much stimulus to James Hargreaves' experiments with his spinning jenny, usually said to have begun about 1764.[20] Moreover, as Akos Paulinyi has calculated, the flying shuttle can have increased weaving output for most Lancashire cottons by no more than 30%, because the vast majority of Lancashire cotton fabrics were narrow and could be woven by a single weaver working the loom without the help of a flying shuttle.[21] The biggest potential savings from the flying shuttle lay in the weaving of broad fabrics, which previously required the work of two weavers. It is no co-incidence that John Kay was brought up in the Rossendale uplands above Bury in Lancashire, where the predominant form of textile production was broad bays – mixed woolen / worsted fabrics – not narrow cottons. It was to the Rossendale baymakers, as well as their equivalents at Colchester in Essex, that he first supplied his new shuttles, not to Lancashire cotton weavers.

A more fruitful approach to understanding the invention of the spinning jenny is to place it in the context of the high spinning wages paid in the 1760s for hand spinning textile fibres of various kinds – not just cotton – in the zone across the north of England identified by Arthur Young. Hand spinning was undertaken predominantly by women. Systematic evidence about women's employment in the eighteenth century is notoriously poor, so establishing the geographical incidence of any one type of spinning can often only be done indirectly.

Figure 3 maps the two available systematic sources for the geographical distribution of spinning in Lancashire and Cheshire from 1765 to 1789. The first source, and the most comprehensive, is summary convictions for frauds by spinners of worsted yarn (spun from long-staple sheep's wool). These convictions were undertaken under the first five years of the Worsted Act of 1777, which established a system of paid inspectors, modeled on the excise service, who were allocated territories across the spinning townships.[22] The inspectors travelled these territories, measuring yarn and prosecuting offenders. The map records all the townships where at least one prosecution is recorded, indicating the extent of

19 For a recent deployment of this argument, see Sven Beckert, *Empire of Cotton: A Global History*, New York, 2014, 65.

20 Edward Baines, *History of the Cotton Manufacture in Great Britain,* London, 1835, 117.

21 Akos Paulinyi, 'John Kay's Flying Shuttle: Some Considerations on his Technical Capacity and Economic Impact', *Textile History*, Vol. 17, 1986, 154.

22 John Styles, 'Spinners and the Law: Regulating Yarn Standards in the English Worsted Industries, 1550-1800', *Textile History*, Vol. 44, 2013, 145-170.

the worsted spinning zone. The second source, which is less comprehensive, is summary convictions for embezzlement of the short-staple sheep's wool put out to be spun by the woolen clothiers and baymakers of the Rossendale area of Lancashire, between 1765 and 1789. There were fewer of these convictions than those involving worsted spinning. Nevertheless, they serve to sketch the extent of the woollen spinning zone.

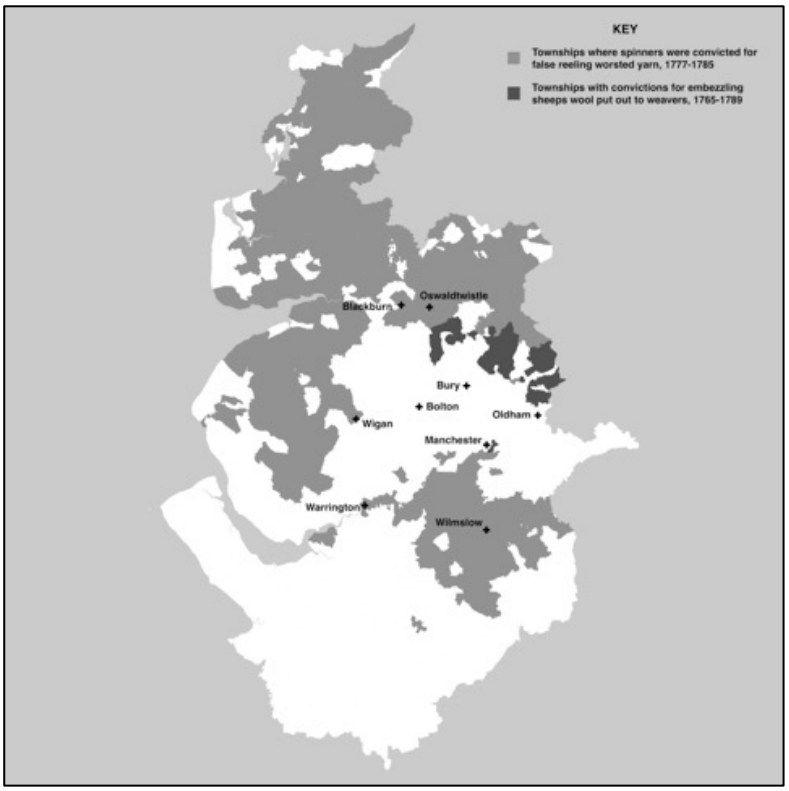

Figure 3. Lancashire and Cheshire: townships with woollen or worsted spinning, 1765-1789.
Sources: Lancashire Record Office, Lancashire Quarter Sessions Files, QSB/1 and QSP; Greater Manchester Record Office, MS f338.4 W1, Worsted inspector's conviction book. Digitized base map: A.E.M. Satchel et. al., *1851 England and Wales Census Parishes, Townships and Places: Documentation* (2006, 2016).

There are no equivalent sources for cotton or flax spinning, but the map makes it clear that the core area of Lancashire's cotton industry, between Blackburn, Bolton, Manchester and Oldham, was hemmed in to the north, the west and the south (as well as over the Yorkshire border to the east) by areas where worsted and woollen spinning offered an alternative employment for women at equivalent wages. To the south-west, especially around Warrington with its sail-making manufactory, there was also flax and hemp spinning, described by Arthur Young and others.[23] Like cotton, these were buoyant, rapidly expanding industries. Indeed, worsted manufacturing, with its core weaving area over the

23 See, Jon Stobart, *The First Industrial Region: North West England, c.1700-60*, Manchester, 2004, 68-9.

Yorkshire border around Halifax, was a more recent arrival in the north of England than cotton. Whereas Lancashire started making cotton fustians towards the end of the sixteenth century, worsteds emerged in Yorkshire on any scale only at the end of the seventeenth.[24]

Predominantly an export industry, Yorkshire worsteds grew very rapidly during the first half of the eighteenth century. In worsteds the ratio of spinners to weavers was especially high, so to secure a supply of yarn the Yorkshire manufacturers were obliged to source yarn from an enormous area up to 50 miles away across the West and North Ridings of Yorkshire, as well as adjacent parts of Lancashire and Cheshire. This was a dynamic process. In the course of the eighteenth century, the worsted spinning frontier expanded further and further away from the core weaving area in Yorkshire. The landowner and miniature painter Samuel Finney, looking back in 1785 at the history of his native township of Wilmslow in Cheshire, recalled that earlier in the eighteenth century the women and children were employed in making silk- and mohair-covered buttons. As fabric-covered buttons became less fashionable around mid-century, the work was replaced by worsted spinning introduced by manufacturers from Yorkshire.[25] Yet Wilmslow was only ten miles south of Manchester, the capital of the Lancashire cotton trade.

4. Spinning through a Microscope

We may lack direct evidence about the precise extent of cotton spinning in Lancashire in the 1760s and 1770s. Nevertheless the distribution of woollen and worsted spinning, combined with what we know about flax spinning around Wigan and Warrington, indicates that the area devoted exclusively to cotton spinning was hemmed in and surprisingly small. There is a simple reason for this. The vast majority of the textiles that comprised the Lancashire 'cotton' industry before 1780 consisted mainly (checks and stripes), or at least half (fustians and cotton prints) of linen.

In the seventeenth century, Lancashire textiles incorporating cotton were usually described as fustians. In the eighteenth century, use of the term fustian came increasingly to be reserved for the traditional, heavy, often napped and ribbed fabrics that had predominated in the previous century, such as thickset, pillow fustian and jeans. The new, lighter products that emerged in the late seventeenth and early eighteenth centuries were rarely termed fustians, but were known by other names, such as dimities, checks, stripes and the 'Blackburn greys' used for printing. Yet these new Lancashire products remained, like the traditional fustians, mixtures of cotton with linen. Indeed, many of the checks and stripes contained a good deal more linen than cotton. In other words, the extension of the product range involved less cotton per yard of cloth on average than the old-style fustians, so the

24 Herbert Heaton, *The Yorkshire Woollen and Worsted Industries from the Earliest Times up to the Industrial Revolution*, Oxford, 1965, 258-276.

25 'Survey of the Parish of Wilmslow' by Samuel Finney of Fulshaw, Esq., in T. Worthington Barlow, ed., *The Cheshire and Lancashire Historical Collector*, Vol. 2, May 1853, 6-7.

pressure to extend the cotton spinning zone was not as great as would otherwise have been the case. Some new, all-cotton fabrics were also developed at this time, most notably the famous cotton velvets, but they represented only a small proportion of the Lancashire industry's output.

The survival of five thousand fabric swatches left with babies at the London Foundling Hospital between 1742 and 1760, consisting largely of the newer, lighter part-cotton fabrics of the types manufactured in Lancashire, enables us to employ microscopic analysis to assess the fibre content of a significant proportion of the Lancashire industry's output on the eve of the Industrial Revolution (Figures 4 and 5).[26]

Figure 4. A printed cotton, described as 'purpill flowerd cotting', 1759, photographed in monochrome. Probably woven in Lancashire and printed near London.
Source: London Metropolitan Archives, A/FH/A/9/1/162:
Foundling Hospital Billet Books, Foundling number 14713. © Coram.

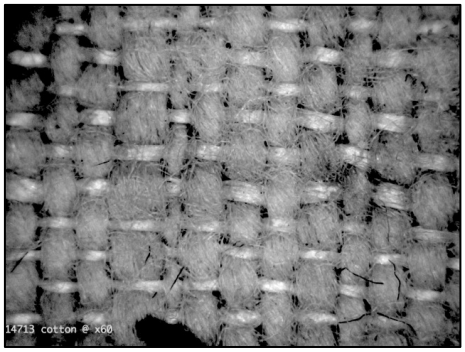

Figure 5. The same printed cotton as in Fig. 4, photographed in monochrome at 60 times magnification. Only the fluffy, loosely-spun weft threads, here running vertically, are cotton. The smooth, shiny, tightly-spun warp threads, running horizontally, are linen, spun from flax.
Source: London Metropolitan Archives, A/FH/A/9/1/162:
Foundling Hospital Billet Books, Foundling number 14713. © Coram.

26 For the background to the Foundling Hospital textiles, see John Styles, *Threads of Feeling: The London Foundling Hospital's Textile Tokens, 1740-1770*, London, 2010. The fibre analysis was undertaken with a Dino-Lite AM7013MZT USB microscope at x60 magnification.

Table 1. Fibre content of yarns in prints, checks and stripes made of cotton and/or linen in the London Foundling Hospital Billet Books, July 1759 and January 1760.

Fibre	Prints	Checks	Stripes	All
Warp cotton, weft cotton	7			7 (6%)
Warp silk, weft cotton	1		3	4 (4%)
Warp linen, weft cotton	42	1	5	48 (46%)
Warp linen, weft linen & cotton		12	8	20 (19%)
Warp linen, weft linen	n/a*	17	5	22 (21%)
Unclear	2	1	1	4 (4%)
Total	**52**	**31**	**22**	**105 (100%)**

* Prints on all-linen fabric are excluded, because the cloth was likely to have been woven in Ireland, Scotland, or Germany, not Lancashire.

Source: London Metropolitan Archives, Foundling Hospital Billet Books, A/FH/A/9/1/149 (July 1759) and /166 (January 1760).

The analysis in Table 1 of a large sample of the kind of fabrics produced by the Lancashire 'cotton' industry in the London Foundling Hospital collection shows that less than half the yarn employed was cotton. Most of the printed fabrics were the half-cotton, half-linen cloth known as 'Blackburn greys', but the mixed-fibre checks and stripes tended to contain more linen yarn than cotton yarn, and many of the checks were all-linen. This pattern of fibre composition was typical; it recurs in surviving sample books for Lancashire checks, stripes and prints circulated by Manchester merchants in the 1760s, the 1770s and even the early 1780s.[27]

By the 1750s, the linen yarn used in these Lancashire-woven fabrics was spun, not by Lancashire women, but mainly in Ireland, Scotland and on the shores of the eastern Baltic. A much larger proportion of locally-spun linen yarn may have been used in seventeenth-century Lancashire fustians, but by 1782 the Manchester merchant Titus Hibbert insisted that English yarn was very little used.[28] As a consequence, the geography of spinning for the Lancashire industry was very different from the Yorkshire worsted industry. In Lancashire, less than half the yarn woven (the cotton) was spun within the region, so the spinning field was geographically far less extensive at any level of output that that of the Yorkshire worsted industry, which sourced almost all its yarn, both warp and weft, locally. At the same time, this pattern of yarn supply sustained the practice of devolving responsibility for spinning the cotton yarn to the weaver, which appears to have been widespread in the middle decades of the eighteenth century. The weaver was provided by the putting-out master with a ready-spun linen warp and cotton wool. He was expected not only to weave the cloth, but also to arrange the spinning of the cotton weft.[29] Spinning weft

27 Winterthur Museum, Delaware, USA, ref. 07 x 5: Henry Remsen, Jr. and Company, Pattern book of textiles, 1767; Metropolitan Museum of Art, New York, 156.4 T 31: The Benjamin and John Bower sample book, 1771; National Trust, Quarry Bank Mill, Styal: Pattern book of the firm of Robert and Nathan Hyde, of Manchester, 1771; Colonial Williamsburg Foundation Collection, Virginia, 1974-569: fold-out pattern card inscribed 'Thomas Smith, Manchester, 23 August 1783'.

28 Mrs Hibbert Ware, *The Life and Correspondence of the late Samuel Hibbert Ware,* Manchester, 1882, 98.

29 This practice was probably borrowed from the baymaking industry of Rossendale, where it was widespread.

required less labour than spinning warp, especially the loosely spun, coarse weft characteristic of many Lancashire cotton-linen fabrics. Consequently, it was feasible for a weaver to have the cotton weft spinning undertaken locally, often mainly by his own family.

Table 2. Spot prices for cotton and linen yarn, pence per pound weight, 1686-1785.

Year	Cotton yarn	Linen yarn
1691	16	8
c.1700	-	7
1726	29	-
1732	35	-
c.1740	40	10
1743	35	-
1769	33	-
1782	-	9
1785	34	-

Sources: *Whiston's Weekly Rememberer*, January 1691; Sir Frederick Eden, *The State of the Poor*, Vol. 1, London, 1795, 213; A. P. Wadsworth and J. de L. Mann, *The Cotton Trade and Industrial Lancashire, 1600-1780,* Manchester, 1965, 172-3, 262, 275; C. Knick Harley, 'Cotton Textile Prices and the Industrial Revolution', *EcHR*, Vol. 51, 1998, 75; Mrs Hibbert Ware, *The Life and Correspondence of the late Samuel Hibbert Ware,* Manchester, 1882, 98.

Linen yarn was cheap (Table 2). Indeed, for much of the eighteenth century, a pound of spun linen yarn cost roughly the same at Manchester as a pound of unspun cotton wool. Pressure on yarn supplies could be managed, at least in the weaving of checks and stripes, by adjusting the proportions of linen or cotton yarn according to their relative prices.[30] Such adjustments were not so readily made, however, in the manufacture of the Blackburn greys sent to London for printing, which were the principal fabric produced in the Oswaldtwistle area where James Hargreaves, the inventor of the spinning jenny, worked as a weaver. By the late 1750s, the domestic market for these printed half-cotton, half-linen fabrics was continuing to expand, while the supply of both linen yarn and cotton wool was becoming more erratic and more expensive.[31]

Crucially for Hargreaves' invention of the spinning jenny, the Yorkshire worsted industry also boomed during the 1750s and early 1760s.[32] Oswaldtwistle was within the worsted spinning zone (Figure 3) and high wages for worsted spinners are likely to have

30 As described by Samuel Touchett in his evidence to a parliamentary committee in 1751; *Report from the Committee relating to Chequed and Striped Linens*, 1751, 291.

31 See John Styles, *The Dress of the People: Everyday Fashion in Eighteenth-Century England*, London and New Haven 2007, 111-27; Trevor Griffiths, Philip Hunt and Patrick O'Brien, 'Scottish, Irish and Imperial Connections: Parliament, the Three Kingdoms, and the Mechanisation of Cotton Spinning in Eighteenth-Century Britain', *EcHR*, Vol. 61, 2008, 625-50.

32 John Styles, '"Our Traitorous Money Makers": The Yorkshire Coiners and the Law, 1760-1783', in John Brewer and John Styles, eds, *An Ungovernable People: The English and their Law in the Seventeenth- and Eighteenth-Centuries*, London, 1980, 189-90. For the especially rapid growth in Yorkshire worsteds in the decades up to the end of the 1750s, see Keith Sugden, 'An Occupational Analysis of the Worsted Industry, c. 1700-1851: A Study of De-industrialization in Norfolk and the Rise of the West Riding of Yorkshire', PhD thesis, University of Cambridge, 2015, chapter 6, and Elvira Willmott, 'Occupations in Eighteenth Century Bradford', *The Bradford Antiquary*, 3rd series, Vol. 4, 1989, 67-77.

attracted women away from spinning cotton, just as they drew them away from button making at roughly the same period at Wilmslow, 30 miles to the south. In Oswaldtwistle that was a challenge faced directly by weavers like Hargreaves, because it was they who often bore the responsibility for having their employer's raw cotton spun into weft. As initially conceived, Hargreaves' spinning jenny spun only weft, it was domestic in scale, and it was optimised for use by children. In other words, it was perfectly contrived to sustain the weaver-based model for processing weft in the face of competition for spinning labour in the locality, because it enabled weavers to rely more exclusively on family labour to convert the cotton wool their employers supplied into yarn.[33]

This incentive to take up the jenny was absent in Normandy, the centre of French cotton manufacturing, where linen warp, cotton weft fabrics also predominated. Here spinning of cotton weft was not part of an integrated family textile economy, supplied with raw and semi-finished materials by a putting-out master, to whom woven cloth was returned in exchange for a single wage payment. In Normandy, cotton spinning was a separate, small-scale commercial activity, conducted by the women who spun. Arthur Young described how they 'buy their cotton, spin it, and then sell the yarn'.[34] At the same time, there appears to have been less competition for spinning labour from other fibres than in Lancashire. Indeed, in Normandy it was the spinning of non-cotton fibres, especially woollen yarn for the fine cloth manufacturers at Elbeuf, that was threatened by cotton.[35]

5. The Warp Factor

The distinction between macro- and micro-inventions deployed by both Robert Allen and Joel Mokyr is a distinction between radical transformation and incremental improvement. Allen foregrounds Hargreaves' spinning jenny as a key macro-invention in cotton, but does the jenny really deserve that accolade? Joel Mokyr is less confident, describing the jenny as small and cheap. Mokyr is correct to emphasise the affordability of domestic jennies, which in Yorkshire probate inventories at the start of the 1780s were valued at between 30 and 50 shillings, much less than the 70 shillings Allen estimates and comparable to many hand looms.[36] Essentially the spinning jenny was a relatively inexpensive, low-tech, mechanical enhancement to household-based spinning. It was just one of a number of small-scale, hand-driven machines which spread among English textile makers during the seventeenth and eighteenth centuries, including warping and twisting mills.

33 This interpretation of the impact of the spinning jenny has a long pedigree; see John Kennedy, 'Observations on the Rise and Progress of the Cotton Trade in Great Britain, Particularly in Lancashire and the Adjoining Counties (Read Before the Literary and Philosophical Society, 3rd November 1815)' in John Kennedy, *Miscellaneous Papers on Subjects Connected with the Manufactures of Lancashire*, Manchester, 1849, 7, and T. S. Ashton, *The Industrial Revolution, 1760-1830*, Oxford, 1997, 58, which insists the effect of small jennies 'was to strengthen, rather than weaken, the family economy.'

34 Young, *Travels during the Years 1787, 1788, and 1789*, second edition, Vol. 1, 564.

35 Alain Becchia, *La draperie d'Elbeuf, des origines à 1870*, Rouen, 2000, 190.

36 Borthwick Institute for Archives, York University, Exchequer and Prerogative Courts of York, wills, 1780-2.

It is, however, the inability of the spinning jenny to spin warp yarns that crucially compromises its status as a macro-innovation. In a loom, the warp yarns lie horizontally under tension. They have to be stronger than the weft yarn, which is passed to and fro by the shuttle as the warp is raised and lowered. The fundamental technical challenge facing the Lancashire cotton industry in the mid-eighteenth century was how to spin cotton warps at a commercially viable price. Without them, Lancashire found it difficult to make all-cotton fabrics like those produced in India. The ubiquity of linen warps in the first half of the eighteenth century demonstrates that Lancashire's hand spinners of cotton could not meet this challenge, but neither could the spinning jenny, which only spun weft. In other words, the jenny could only do what Lancashire hand spinners were doing already, albeit rather more economically and with more consistent results.

The decisive macro-invention in cotton was Arkwright's water frame of 1769, which spun cotton twist – in other words warp. The key to Arkwright's success was a sequence of three pairs of small metal rollers which drew out the cotton fibre and fed it to the spindles.[37] To work successfully, the manufacture of these rollers required far greater mechanical precision than James Hargreaves' crude apparatus. In his pathbreaking 1837 analysis of industrial revolution, Adolphe Blanqui already singled out the transformatory impact of Arkwright's rollers: '… it needed only two small cylinders, rotating in opposite directions, to transform fundamentally the relationship between Europe and Asia, and centuries-old traditions of work'.[38] The rollers were to go on to be a crucial component in Samuel Crompton's mule of 1779, which combined elements of Arkwright's and Hargreaves' inventions.

Why did Lancashire hand spinners find it so difficult to spin cotton warp yarn, when their Indian equivalents produced it in vast quantities and had done so for centuries? In order to answer that question, it is necessary to recognise that difficulties associated with the spinning of warp yarns, both in Britain and in western Europe more broadly, were longstanding and not confined to cotton. The Middle Ages saw the introduction in Europe of two key mechanical innovations which transformed the manufacture of woven textiles: the spinning wheel, which replaced the drop spindle, and the horizontal, treadle loom, which replaced the vertical, warp-weighted loom. Each increased output per hour by at least three times by comparison with the previously dominant technology. Yet despite the superior productivity of the spinning wheel, wheel-spun yarn was banned for use as warp in the fine woollen broadcloths woven with the new looms throughout the Low Countries, France and Italy during the later Middle Ages. Wheel-spun warp was condemned as deficient in strength and quality – weak, uneven, lacking twist and excessively knotty compared to yarn spun with a drop spindle. Although wheel-spun yarn was acceptable for wefts, these defects rendered it unsuitable for warps.[39] In other words, the new Medieval spinning and weaving

37 Arkwright's 1769 patent specified four pairs of rollers per spindle, but the surviving machines from Arkwright's mills used three.

38 Blanqui, *Histoire de l'Économie Politique*, Vol. 1, 209.

39 John H. Munro, 'Medieval Woollens: Textiles, Textile Technology, and Industrial Organisation, c. 800-1500', in

technologies may have offered savings in labour time, but they were perceived to be at the cost of reductions in quality.

Hand spinning the kinds of short-staple wools used in Medieval broadcloths bears many similarities to spinning cotton. The shortness of the fibres made it awkward and time-consuming to insert the degree of twist necessary to bear the tension the warp is subject to in a horizontal loom. For broad woollens, the difficulties with wheel-spun warps appear to have been resolved gradually during the sixteenth century. Precisely how this was achieved remains unclear, although subsequently warp spinning commanded a markedly higher piece rate than weft spinning.[40] For cottons, the difficulties persisted.

Part of the problem may have been the horizontal loom itself. The evidence from eighteenth-century images of looms in India and western Europe indicates European looms were much heavier in their construction, suggesting they might have been operated at higher warp tensions. Providing stronger warp threads by using two- or three-ply yarns – the alternative means of producing a strong enough warp in a high-tension loom – doubled or tripled the cost of the warp. The warps in surviving Indian fabrics are not usually multi-ply, but those in all-cotton Manchester fabrics of the mid-eighteenth century, such as cotton velvets, often are.[41]

More important than differences between European and Indian looms was the difference in the cost of hand spinning between Europe and South Asia. European women were capable of spinning to the same specification as Indian spinners. The available technologies – hand spinning wheels and drop spindles – were similar in Europe and India. The only area in western Europe where cotton warp yarn was produced in quantity in the mid-eighteenth century was the Swiss Alps around Zurich, Glarus and St Gallen. The Swiss produced siamoises and indiennes with a cotton weft and a linen warp, but they also made all-cotton muslins. The weft yarn for the siamoises was produced on a spinning wheel, but the fine muslin warps – known as *Löthli* yarn – were spun on a drop spindle at a higher rate of pay.[42] Drop spindle spinning was slow. Even at Alpine Swiss wage rates, it was evidently economic only for expensive muslins.

Table 2 makes it clear that cotton weft yarn was already inordinately expensive in England compared to linen warp yarn. Partly this reflected the high cost of imported raw cotton in Britain, but it is, nevertheless, most unlikely that spinning cotton warps on drop spindles could possibly have been economic at Lancashire's relatively high spinning wage rates.[43] In low-wage India, there was no such obstacle to producing cotton warps, especially

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David Jenkins, ed., *The Cambridge History of Western Textiles*, 2 vols, Cambridge and New York, 2003, Vol. 1, chapter 4.

40 See, for example, Wiltshire and Swindon History Centre, 927/1: John and Thomas Clark, Ltd., Book kept by Usher and Jeffries recording details of the cloths they made, 1721-1726.

41 Bibliothèque de la Union Centrale des Arts Decoratifs, Paris, G.C. 2: 'Le Livre d'Echantillons de John Holker', c. 1750, swatches numbered 42, 55 to 60, and 69.

42 Rudolf Braun, *Industrialisation and Everyday Life*, translated by Sarah Hanbury Tenison, Cambridge, 1979, 140; Cornel Dora, *Textiles St. Gallen: A Thousand Years of Tradition, Technology and Trends*, St Gallen, 2004, 36-43.

43 In the eighteenth century, use of the drop spindle was dying out even in north Norfolk, where it had continued to be used since the sixteenth century to spin some of the very finest worsted yarns employed in the most expensive

given the ready availability of raw cotton. Importing cotton warp yarn from India to Britain was not feasible, because transport was expensive and the English East India Company did not regard yarn sales in Britain as sufficiently profitable to build into their business model. Indeed, the Company's trade in cotton yarn contracted in the course of the eighteenth century, having been small at its beginning.

Lancashire's reliance on linen warps did not pose serious difficulties in the seventeenth century, when traditional, heavy fustians were the main Lancashire product incorporating cotton. Fustians had been made with linen warps since they were first manufactured in northern Italy in the Middle Ages. The inability to produce cotton warps became an issue for Lancashire only with the introduction at the start of the eighteenth century of the newer, lighter, part-cotton fabrics (checks, stripes, Blackburn greys). These fabrics were responses to, and often adaptations of, the Indian, all-cotton, coloured fabrics imported to England in large quantities by the East India Company in the last three decades of the seventeenth century. They were already being made with linen warps and cotton wefts before the legislation prohibiting the use of printed, painted, stained, or dyed calicoes in Britain took effect at Christmas 1722 (7 Geo I, c 7), excluding most of their all-cotton Indian competitors from the British market, including checks and stripes.[44] The ready availability of cheap linen warp yarn and progressive increases in import tariffs on Indian cottons prior to 1722 had already secured a domestic market for their new, Lancashire-made imitators. The so-called Manchester act of 1736 (9 Geo II, c 4), which somewhat misleadingly insisted printed Blackburn greys were 'a branch of the ancient fustian manufacture of this Kingdom', simply served to defend their sale against legal assaults by woollen and silk manufacturers. Blackburn greys printed near London in imitation of printed calicoes were already on sale as 'printed cottons' in the 1720s.[45] The distinction between printed cottons and printed calicoes became a familier one. A manual for Excise officers assessing the tax on printed fabrics made the difference clear. Excisemen were told to distinguish between 'callicoes (the materials whereof are all, or the greatest part, cotton) and what are called cottons (which consist of a linen warp, and cotton woof or shoot)'.[46]

In the middle decades of the eighteenth century consumption of these light, decorative fabrics woven in Lancashire with linen warps and cotton wefts boomed. Trials for thefts of women's gowns at the Old Bailey in London show a progressive increase in the proportion of gowns made from cotton (i.e. cotton-linen). By the 1740s they accounted for more cases than any other type of gown (Table 3). The only Indian-made all-cotton fabric to retain its market in Britain was plain muslin, which did not fall within the terms of the prohibitions. It was already sufficiently expensive for high tariffs to make little difference to its wealthy purchasers.

Norwich stuffs; see *Norfolk Chronicle*, 18 March 1786.

44 See, for example, Lancashire Record Office, WCW 1720 Thomas Smalley: probate inventory of Thomas Smalley of Blackburn, chapman, 1720, who was weaving blue and white cotton and linen checks.

45 See, for example, *Newcastle Chronicle*, 23 September 1727.

46 Anon, *Instructions for Officers who survey Printers of Callicoe, etc.*, London, 1777, 13-14. 'Woof' and 'shoot' were alternative names for weft yarn.

Table 3. Trials for theft of stolen gowns at the Old Bailey, 1720–1759.

Decade	all gowns	silk gowns	worsted gowns	cotton gowns	linen gowns
1720s	267	31	27	12	21
1730s	280	44	42	27	29
1730s	278	47	54	72	41
1740s	253	45	67	71	70

Source: Old Bailey Proceedings Online (http://www.oldbaileyonline.org), accessed 30 September 2014.

All-cotton Indian fabrics were not, however, excluded from overseas markets. Many European countries imposed prohibitions and other restrictions to protect their textile industries, as in Britain, but no such restrictions applied in the African slave trade. Indian all-cotton textiles were indispensible for the purchase of slaves by Europeans, particularly those with woven checked or striped patterns. Joseph Inikori has insisted that for Britain, by the mid-eighteenth century the leading European slave-trading nation, this was a decisive stimulus to technical innovation in cotton manufacturing. He argues that in the middle decades of the eighteenth century, British exports of cottons to Africa grew rapidly. They consisted overwhelmingly of checked fabrics, which mimicked the Indian textiles sold by Europeans in West Africa. It was the rapid growth of these exports, he argues, 'dependent almost entirely on the slave economy of the Atlantic system', that 'created pressures which stimulated the inventions.'[47]

Inikori alerts us to the importance of locating technological innovation in cotton textiles in the context of the markets, especially export markets, where they competed with equivalent fabrics from India, or elsewhere. However, his insistence that Lancashire cotton checks sold in West Africa played the decisive role in stimulating innovation is questionable, especially for the 1760s, the key decade for the mechanisation of spinning. There are two difficulties here: timing and fibre content.

Inikori offers quantitative time-series of exports, drawn from British customs records, to argue that 'overseas demand began to grow from the middle of the eighteenth century'.[48] Domestic demand, he insits, remained relatively stagnant, but during the 1750s and 1760s demand for cotton checks to exchange for slaves in West Africa grew rapidly. Growth put pressure on yarn supplies, prompting the search for technical innovations in the 1760s. His analysis fails, however, to take into account marked inconsistencies in the way customs officers classified different varieties of cotton and linen checks. The customs records tell us, for example, that no British-made cotton or linen checks were exported from London to West Africa in the 1730s, a decade when nearly 300 ships left the port on slaving voyages.[49] This is hard to believe. Checked fabrics were subject to various changes in official classification in the period, so it is likely that they often remain concealed in the customs

47 Joseph Inikori, 'Slavery and the Revolution in Cotton Textile Production in England', *Social Science History*, Vol. 13, 1989, 355 and 369.

48 *Ibid*, 354.

49 David Richardson, 'The British Empire and the Atlantic Slave Trade, 1660-1807', in P.J. Marshall, ed., T*he Oxford History of the British Empire: Volume II: The Eighteenth Century*, Oxford, 1998, 446.

records within general categories such as 'linen', especially before 1750.[50] If so, then substantial growth in the output of checks in Lancashire probably extended back over at least three or four decades before the 1750s, as is suggested by the evidence of probate inventories.[51] Any new pressure on yarn supplies associated with further growth in the 1750s and 1760s would have been correspondingly less intense than Inikori suggests.

The second difficulty concerns the fibre content of Lancashire checks. Lancashire manufacturers undoubtedly made great efforts to supply West African markets with textiles that resembled Indian cotton checks. However, almost all were either linen-cotton mixes, or all-linen. The phrase used repeatedly to describe these checks in the British customs records, on which Inikori's argument turns, is 'cottons and linens check'd', implying they could be made from cotton, or linen, or a combination of the two.[52] In practice their warps were mainly made from linen, due to Lancashire's inability to produce cotton warps at competitive prices. However, as Table 1 demonstrates, most of the checks used by poor women in London in 1759 had linen wefts as well as linen warps. Almost all the rest combined linen and cotton yarns, but with a relatively small proportion of the latter. The same was true of checks exported to the American colonies, and was probably true of those sold in Africa. The reason was cost. The more cotton yarn a length of check incorporated, the higher its price. In Philadelphia, from the 1740s to the 1770s, prices for imported all-linen checks were consistently cheaper than those for 'cotton checks', which contained at least some cotton threads.[53]

The main advantage of cotton yarn over linen yarn was its superior dyeing qualities. However, Lancashire checks were contrived to enter the African market at a lower price point than many of the Indian all-cotton fabrics sent to Africa from London, so it was necessary to trade quality for price. As the Manchester merchant Titus Hibbert pointed out in 1782 when discussing supplies of linen yarn: 'Great quantities of Derry tow yarn and Ermland are made into checks and other goods for exportation, etc. not that such is best for checks, but the makers of these goods cannot afford to buy the best sorts of yarn. So the fine Sligo yarn is much used for weft for African goods, and by the handkerchief makers, partly because it is more length for the money than web and Drogheda yarns.'[54]

No doubt the Lancashire checkmakers welcomed any fall in the price of cotton yarn resulting from mechanical innovation. Lower prices would have been especially welcome in the difficult years of the late 1750s and early 1760s. In those years imports of raw cotton fell by a half, yet prices, having initially fallen, climbed back to their previously higher levels

50 TNA: PRO, CUST 3/31-39: Board of Customs, Ledgers of Imports and Exports, 1730-39. This is certainly the view of A. P. Wadsworth and J. de L. Mann in *The Cotton Trade and Industrial Lancashire, 1600-1780*, Manchester, 1965, 153.

51 See, for examples, Lancashire Record Office, WCW 1720: inventory of Thomas Smalley of Blackburn, chapman; WCW 1728: inventory of William Ramsbottom, Bury, chapman; WCW 1735: inventory of Joseph Jolley of Manchester, linen draper.

52 TNA: PRO, CUST 3/51-80: Board of Customs, Ledgers of Imports and Exports, 1751-80.

53 Marc Egnal, *New World Economies: The Growth of the Thirteen Colonies and Early Canada*, New York and Oxford, 1998, 171-79.

54 Hibbert Ware, *Life and Correspondence*, 97.

faster than the volume of imports. The supply of imported linen yarn was largely unaffected, although prices increased.[55] Yet under circumstances like these, the first response of the checkmakers was not to encourage mechanisation, but to reduce the proportion of expensive and hard-to-source cotton in their checks, and increase the proportion of more accessible and still much less costly linen. Wholesale purchasers were all too aware of these tactics. A Manchester merchant partnership was informed in 1772 that a New York purchaser had 'complained of the checks having some threads of blue linen mixed with the cotton, but [I] told him there certainly was as much cotton in them as could be afforded for the price.'[56]

Insofar as Lancashire's checkmakers did benefit from mechanical innovation in spinning in the 1760s and 1770s, it was from the spinning jenny. Its inability to spin warp yarns, which in retrospect compromises its status as a macro-invention, was of little concern for checkmaking. Loosely spun cotton yarns provided the strong colours in a check; the smoother, tightly spun linen yarns handled the loom tension. Making all-cotton copies of the kinds of Indian cottons sold in Africa was not a pressing priority for most Lancashire checkmakers. At the modest price point targeted by most Lancashire checks, using the tightly-spun cotton twist produced by Richard Arkwright's decisive macro-invention would have been uneconomic. Even in the mid-1780s, a quarter century after Arkwright's 1769 patent for his water frame, frame-spun cotton warp cost over 40d. per lb., while linen warps were no more than 11d. per lb.[57]

Joseph Inikori is right to emphasise the importance of Atlantic markets combined with import substitution as drivers of eighteenth-century technical innovation in textiles. However, in the case of the key invention – Richard Arkwright's water frame – the relevant Atlantic context is the market for printed calicoes in Britain's North American colonies, not the market for checks in West Africa. The crucial importance of North America is not surprising, given it was the single most dynamic market in the general expansion British manufactured exports experienced during the eighteenth century.[58] In the British colonies in the Americas, decorated, all-cotton Indian calicoes were not subjected to the prohibitions and tariffs imposed in Great Britain in the early decades of the eighteenth century.[59] All types of Indian textiles could be imported and used in the American colonies, as long as they were shipped from India via Great Britain. This did not pose much of a threat to Lancashire manufacturers of checks. In the Americas, a large part of the market for checks consisted of indentured servants and African slaves in the southern mainland colonies and the West Indies, who had

55 Elizabeth Schumpeter, *English overseas trade statistics, 1697-1808*, Oxford, 1960, Table XVI; Alexander Bald, *The Farmer and Corndealer's Assistant*, Edinburgh 1780, unpaginated, list of Perth linen yarn prices, 1741-76; Medieval and Early Modern Databank: http://www2.scc.rutgers.edu/memdb/database_list.html, Amsterdam prices for Smyrna raw cotton, from N.W. Posthumus, *Nederlandsche Prijsgeschiedenis*, Leiden, 1943, accessed 25 November 2015.

56 Historical Society of Pennsylvania, AM.125: William Pollard letter book, 1772-4, William Pollard, New York, to Benjamin and John Bowers, Manchester, 27 November, 1772. Also see note 29 above.

57 C. Knick Harley, 'Cotton Textile Prices and the Industrial Revolution', *EcHR*, Vol. 51, 1998, 75; Hibbert Ware, *Life and Correspondence*, 98.

58 Jacob Price, 'The Imperial Economy, 1700-1776', in Marshall, *Oxford History of the British Empire*, 87, 101.

59 Jonathan Eacott, 'Making an Imperial Compromise: The Calico Acts, the Atlantic Colonies, and the Structure of the British Empire', *William and Mary Quarterly*, 3rd series, Vol. 69, 2012, 731-762.

no option but to accept the cheap all-linen and linen-cotton fabrics their masters acquired from Lancashire at prices below their Indian all-cotton equivalents. The same was not true of printed fabrics.

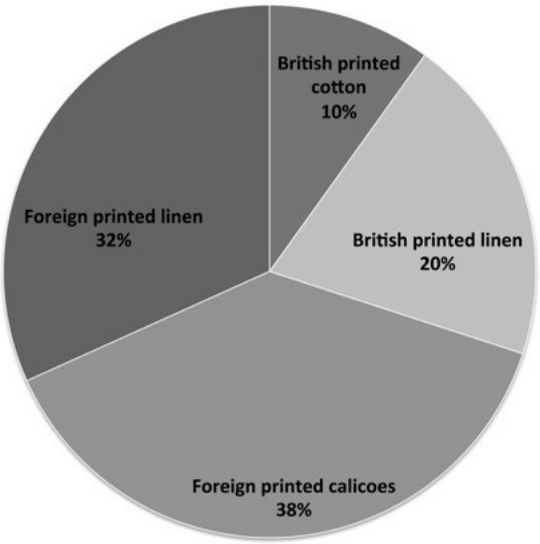

Figure 6. Imports of Printed Fabrics to British North America, 1769-71.
Source: TNA, PRO, CUST 16/1: Ledgers of imports and exports, America, 1768-1773.

American consumers sustained a firm preference for prints on Indian all-cotton calico across the decades after 1722, when their British counterparts were required to make do with prints on linen-warp, cotton-weft cottons. They exercised that preference despite prints on calico being more expensive than equivalent prints on cotton. During the three years 1769 to 1771, which provide the most detailed information about imports available for the colonial period, prints on Indian all-cotton calico (foreign printed calicoes) outsold British cotton-linen prints (British printed cotton) by almost four to one in the British colonies in North America (Figure 6). The printed designs were often identical, because in both cases the textile printing was mostly done in the vicinity of London, not in India, nor in Lancashire. But the appearance and handling of the resulting fabrics were clearly not the same. As a Bedfordshire gentlewoman remarked in 1776, printed calico was 'a great deal lighter than a Cotton, and the colours look more lively'.[60] Lacking the capacity to spin cotton warps, Lancashire producers of cotton-linen fabrics for printing were at a marked disadvantage in the American market.

These were highly desirable fashion goods which sold on their appearance and their modishness. The long delivery times involved in commissioning decorated fabrics from

60 Bedfordshire and Luton Archives and Record Service, M10/4/34: Williamson Muniments, correspondence, letters to Mary Williamson, 1775-8, Margaret Cater, Kempston Greys, Bedfordshire, to Mrs. Mary Williamson, London, 17 October 1776.

India dictated that the majority of the printing was done in English printworks on Indian-sourced plain white calicoes, employing exactly the same wooden blocks and copper plates used to print cottons.[61] Nevertheless, Americans knew the difference between a printed calico and a printed cotton. In 1774 Henry Fleming, a merchant at Norfolk, Virginia, complained to his partners in Whitehaven, England, 'The calicoes charged by Mr. Potter [draper at Whitehaven] per the [ship] James are nothing but high priced printed cottons, wretched dull patterns beyond the limits of our order and never likely to fetch first cost.' A couple of months later he took up the theme again: 'when we order calicoes we shall have callicoes or nothing …. The people of Whitehaven who have not been in Virginia it is generally remarked hold the old doctrine "That since such an an article is going to Virginia and though it will not sell here it certainly will there". It is much to be wished such people would come with such goods to try. The people in Virginia are to the full as nice and curious as in England, hence our success entirely depends upon our having neat and fresh goods to suit such.'[62]

In 1722, when the prohibition on printed calicoes was imposed in Britain, the population of British North America was under half a million, less than a tenth of that of England. By the eve of the American revolution in 1776, the population of the future United States was two and a half million, over a third of that of England. What must have seemed a small, distant, unfamiliar and insignificant market to the Lancashire manufacturers of the 1720s had, by the 1760s, become huge, prosperous and indispensible. Its importance was enhanced by a boom in textile exports of all kinds to the mainland colonies during the later years of the Seven Years War, driven by a kind of war Keynesianism. Exports of printed calicoes from Britain to its North American colonies were more than 50 per cent higher in the decade following the British military victories in the *annus mirabilis* of 1759 than in the previous ten years.[63] The proportion of calicoes printed in Britain that were exported to America also rose, from approximately 60 per cent to 70 per cent.[64] Calico exports were to rise higher still in the early 1770s, before the onset of the American Revolutionary conflict.

In the mid-eighteenth century, North America was a crucial export market for textiles printed in Britain. It was, therefore, America, more than any other market, that demonstrated the potential profits the Lancashire cotton industry was foregoing due to its inability to produce cotton warps economically for printed fabrics. Lancastrians must have been well

61 See, for example, TNA: PRO, C109/314: Chancery Masters Exhibits, Stock taking records of Newman and Hunt, calico printers, Beddington End, Surrey, 1771-8.

62 Cumbria Record Office Carlisle, D/ Lons/W/ 22/Fleming [Box 1841]): Henry Fleming Letterbook, April 1772-October 1775, April 1783-October 1788, Henry Fleming, Norfolk, Virginia to Fisher and Bragg, Whitehaven, 12 May and 29 July 1774.

63 TNA: PRO CUST 3/49-75: Board of Customs, Ledgers of Imports and Exports, 1749-1775. Export magnitudes are based on the annual values of calicoes re-exported from Britain to the 13 British colonies that were to comprise the United States of America. The Customs category 'calico' appears to be reasonably consistent. It includes all calicoes, whether decorated or plain white, but merchants' invoices for Philadelphia and New York show that the overwhelming majority of calicoes imported to British North America were printed, not plain.

64 The percentage calculation is based on a comparison of TNA: PRO CUST 3/49-75: Board of Customs, Ledgers of Imports and Exports, 1749-1775 and PRO CUST 145/20: Excise duties, receipts, payments and rates, 1684-1798. It assumes that all the calicoes exported to North America were printed and that the length of an average printed calico piece was 15 yards, as suggested by American merchants' invoices and British calico printers' records.

aware that their cotton-linen prints were very much second-best in America, all the more so because in the 1750s and 1760s Manchester firms began, for the first time, to develop direct relationships with merchants in North America, exporting large volumes of Lancashire-made fustians, checks, stripes and dimities.[65]

Yet at the same time, two decades of conflict in India meant the East India Company faced increasing difficulty supplying the plain white calicoes used for printing, despite the fact that white calicoes, rather than coloured calicoes or muslins, were the principal focus of its textile trade. The years from 1756 to 1763 saw the lowest numbers of white calico imports to London in half a century. Prices kept rising. In these years, America took over 80% of the Indian calicoes that were printed in Britain, but London merchants found it difficult to meet ever-increasing American demand.[66] A London supplier of printed calicoes wrote apologetically in 1760 to the New York merchant, James Beekman, 'we not having had a sale at the East India house for many months had no cloth to get your pattern printed from, nor any of that pattern, or any china blue in the house'.[67] Even when calico was available, it was becoming progressively more expensive. The following year a Philadelphia merchant complained to London 'the calicoes received by Captain Lane are so extravagantly dear that we cannot sell them to advantage.'[68] The East India Company's problems in its calico trade during the 1750s and 1760s provided a potential opening for alternative suppliers. Yet it was an opportunity Lancashire cotton producers were unable to seize, as long as they lacked the capacity to spin the cotton warps essential for weaving calicoes.

6. A luxurious Route to Technical Innovation

Joel Mokyr suggests macro inventions are so radical in character that their relationship with their immediate economic context is tenuous, at best. He is right to question how intimately macro-inventions were related to short-term economic forces, but that does not mean they were unprecedented or inexplicable. There is certainly little direct evidence as to what prompted the barber and wigmaker, Richard Arkwright, to begin work on a spinning machine in 1767. Nevertheless, the context in which he and other inventors were working in Lancashire in the mid-1760s is clear enough. Demand for Lancashire cotton goods was increasing at home and abroad, but raw cotton for weft was in short supply and becoming very expensive. The imported linen yarn used for warps in most Lancashire goods was also unprecedentedly expensive, although the volume of yarn imports had never been greater.

65 Peter Maw, 'Yorkshire and Lancashire Ascendant: England's Textile Exports to New York and Philadelphia, 1750-1805', *EcHR*, Vol. 63, 2010, 738; Winterthur Museum, ref. 07 x 5: Henry Remsen, Jr., and Co. (New York), Pattern book [of textiles] received from Messrs. Benjamin & John Bower, merchants, Manchester, 1767.

66 Ralph Davis, 'English Foreign Trade, 1700-1774,' *EcHR*, Vol. 15, 1962, 302-3; Chris Nierstrasz, *Rivalry for Trade in Tea and Textiles: The English and Dutch East India Companies (1700-1800)*, Basingstoke, 2015, 171. In the years from 1756 to 1763, America took approximately 80% of all the calicoes printed in Britain.

67 Philip L. White, *The Beekmans of New York in Politics and Commerce, 1647-1877*, New York, 1956, Vol. 2, 647.

68 Historical Society of Pennsylvania, Jones Family Papers, Vol. 6: Jones and Wister letter book, 1759-81, Jones and Wister, Philadelphia, to William Neale, London, 22 May 1761.

The increase in raw material costs offered an incentive for cost-saving innovations at all stages in the production sequence. The shortage of raw cotton provided a particular incentive to economise in its use, whether by cutting the cost of spinning, or by producing finer, more even, less wasteful yarn, or by substituting linen yarn for yet costlier cotton. The competition for spinning labour from buoyant worsted and linen industries on the periphery of the Lancashire cotton-spinning zone simply re-inforced these incentives, by restricting the ability to secure additional, cheaper spinning labour at a distance. In the background lay the unexploited opportunity of the printed calico market in British North America, where an inferior Lancashire substitute – printed cotton – already had a presence, although a subordinate one. America was a privileged market for British goods, where sales of printed calicoes were booming, yet the East India Company's supply of the key production input – white calico for printing – was inadequate.[69]

Richard Arkwright was the Lancastrian entrepreneur-inventor who successfully exploited the opportunity signalled so plainly by the American preference for printed calicoes. Unlike Hargreaves' spinning jenny, his water frame could spin the strong, tightly-twisted cotton warps required to weave calicoes. Whether Arkwright set out with the objective of producing cotton warp yarn is unclear, although his use of a spindle and flyer mechanism, which tends to put a high twist into yarn and was used for hand spinning of flax, suggests he did. He was certainly quick to set his new yarn to work making calicoes for printing. Within a few months of his first, horse-powered Nottingham spinning mill going into production in late 1772, he was having the yarn it produced woven into calicoes.[70] At this stage, in 1773, the use of printed calico in dress or furnishings was still prohibited in Britain under the Act of Parliament that had taken effect in 1722. There was no certainty that the legislation would be repealed. Yet even if Arkwright and his partners had not secured its repeal in 1774, unimpeded access to the burgeoning American market ensured they had a profitable outlet.

Arkwright's achievement should not, however, be interpreted simply as a response to the economic opportunities of the 1760s. As has often been pointed out, Arkwright invented relatively little. Rather he made other people's inventions work. The immediate history of those inventions stretched back across the previous four decades, but their deeper genealogy lay in medieval Italy. In many respects they exemplify Mokyr's 'great synergy of the Enlightenment' – the combination of useful knowledge and institutional incentives. The influence of Baconian ideas, the liberality of the patent system and high tariff barriers against

69 The much larger market for calicoes in continental Europe was also affected by supply problems in India, but British re-exports of calicoes to Europe grew more slowly than those to America in the 1750s and 1760s, suggesting that America was where growth opportunities lay, along a supply chain in which Lancashire was already embedded. Comparison of the British export data with East India Company import records is hazardous, but suggests that in some years in the 1760s and early 1770s a third of white calico imports from India were being printed in England and then re-exported to North America. From 1767 to 1774 approximately 60% of all calicoes printed in Britain were being exported to North America (see note 64 for sources). In the early to mid-1760s there would have been no reason to expect that the prohibition on decorated calicoes in the domestic British market could be overturned, especially in the light of the acute difficulties faced by British silk manufacturers.

70 Fitton, *The Arkwrights*, 26-37.

foreign manufactured goods all made eighteenth-century Britain a congenial environment for mechanical innovation in textiles. Yet the inventions Arkwright exploited were also grounded in the preoccupation of European states with economic competition and luxury manufacturing prior to the Enlightenment.

Historians tend to view the Industrial Revolution retrospectively as the founding moment of modernity. In interpreting the textile innovations of the late eighteenth century, their perspective has been profoundly shaped by authors like Adolphe Blanqui and Edward Baines who wrote some of the earliest histories of cotton in the Industrial Revolution.[71] Theirs was a backwards view from a very particular moment – the moment in the 1830s when cotton had become a mass production, mass market textile, when prices of cottons had fallen so far that huge quantities of worsteds were being manufactured with cotton warps, and when cotton was supplanting linen for working people's shirting and sheeting for the first time, because it had finally become cheap enough to overcome its deficiencies in durability.[72] A different trajectory emerges if we adopt the opposite perspective to Blanqui and Baines and assess the innovations of the Industrial Revolution in terms of the broader textile landscape of early modern Europe from the sixteenth to the eighteenth centuries. Judged in terms of what we might call the 'before' picture, Richard Arkwright's macro-invention appears less a first step on the road to mass production, and more the outcome of a long history of applying capital-intensive, mechanical solutions to quality and supply problems in luxury textile manufacturing.

The key component in Arkwright's machine, the drafting rollers Blanqui identified as 'two small cylinders, rotating in opposite directions', were first applied to cotton spinning in the 1730s by Lewis Paul, a London-born inventor of textile machinery. In 1738 Paul patented a spinning machine which incorporated a series of rollers for feeding the fibre to the spindles. Rollers were already widely employed in England in metalworking and in textiles, and Paul probably derived the idea of using them in his spinning machine from his previous, successful invention, a pinking engine. Paul's patent claimed his spinning machine spun either cotton or wool, but when it was subsequently put to work at Birmingham, Northampton and elsewhere, it spun almost exclusively cotton. Although it never achieved great success, due to unresolved technical issues, it was not the complete failure it has sometimes been painted. At Northampton, a purpose-built, water-powered factory employed a hundred workers on five of Paul's machines, each with fifty spindles. It continued in use from 1743 until about 1761, only eight years before Arkwright patented his spinning frame.[73]

The fact that cotton became the focus of Paul's efforts in the 1730s, when cottons accounted for only a very small proportion of English textile production, is significant. In late seventeenth and early eighteenth century England, cotton textiles were far from being

71 Blanqui, *Histoire de l'Économie Politique*; Baines, *History of the Cotton Manufacture*.

72 John James, *The History of the Worsted Manufacture in England*, London, 1857, chapter 12; John Styles, 'What were Cottons for in the Industrial Revolution?', in Giorgio Riello and Prasannan Parthasarathi, eds, *The Spinning World: A Global History of Cotton Textiles, 1200-1850*, Oxford, 2009, 307-26.

73 David L. Bates, 'Cotton-Spinning in Northampton: Edward Cave's Mill, 1742-1761', *Northamptonshire Past and Present*, Vol. 9, 1996, 237-51.

the mass market commodities they were to become by the 1830s. In the middle decades of the eighteenth century, cotton gowns still remained semi-luxuries, less expensive than silks but more expensive than those made from other fibres (Table 4).

Table 4. Values of gowns, in shillings, 1750-1778.

Material	Average indictment values of gowns stolen in London, 1750-59 (n = 227)	Average pawn values of gowns at York, 1777-78 (n = 896)
Silk/satin/half silk	19.9	5.9
Cotton	6.5	4.5
Linen	5.3	3.9
Worsted	4.5	2.8
Other	10.5	4.0

Sources: Old Bailey Proceedings Online (http://www.oldbaileyonline.org), accessed 17 October 2015; York City Archives, Accession 38: Pledge book of George Fettes, pawnbroker, York, 1777-8. Sample consists of all gowns identified by material and valued individually.

Lewis Paul moved to Birmingham to start work on his new machine in 1732, the year the patent expired on the water-powered silk throwing machinery installed by Thomas Lombe in his huge factory at Derby in 1719. Silk (other than silk waste) is not normally spun. Instead, the long, very fine filaments of silk fibre are unwound from the cocoon and then twisted together to produce a multi-filament yarn. In Italy, Europe's primary silk manufacturing centre before 1700, the twisting process, known in English as throwing, was mechanized during the Middle Ages by means of the circular silk-throwing mill. These circular mills were initially driven by hand, but water-power was applied in Bologna as early as 1341. In Italy the machinery employed in these mills went on being refined and enlarged over the next three centuries.[74] The process culminated during the later seventeenth century in Piedmont, in north-west Italy, where 125 huge, multi-story, silk-throwing mills had been built by the start of the eighteenth century, housing sophisticated water-powered winding and throwing machinery and each employing on average over fifty workers.[75] The principal purpose of these throwing machines was to produce organzine – silk warp – which, like most warps, required a much higher twist to give it strength. From the mid-seventeenth to the mid-nineteenth centuries, Piedmontese organzine was the best in Europe, an indispensible raw material for weaving fine silk piece goods at Lyon and Spitalfields, and consequently the object of bitter technological rivalry in the continent's other silk manufacturing countries.

Silks were the pinnacle of early modern European élite fashion, the epitome of luxury. They were also a principal focus of capital-intensive mechanical innovation. From throwing mills to engine looms, stocking frames to draw looms, inventive effort in textiles was invested disproportionately in the machinery of silk manufacture, driven by mercantilist

74 Carlo Poni, 'The Circular Silk Mill: A Factory before the Industrial Revolution in Early Modern Europe', *History of Technology*, Vol. 21, 1999, 65-85.

75 Giuseppe Prato, *La Vita Eonomica in Piemonte a Mezzo il Secolo XVIII*, Turin 1908, 218.

competition between the states of early modern Europe in this most fashionable of products.[76] Thomas Lombe's machines in his factory at Derby were pirated copies of the most up-to-date Piedmontese silk throwing equipment. That did not prevent him from being awarded a 14 year British patent and feted for reducing the country's dependence on imported thrown silk. On the expiry of his patent in 1732, a grateful parliament awarded him the enormous sum of £14,000 in lieu of its extension, encouraging others to use the technology. The lesson for entrepreneurs about the British state's support for mechanising primary processing of imported luxury raw materials could not have been clearer. The same year, Lewis Paul began work on his machine to make yarn from cotton – the next most expensive textile fibre after silk. Circular, with a central drive shaft, it was strikingly similar in design to Lombe's Italian silk throwing mill.[77]

The financial returns Lewis Paul secured from his invention were meagre compared to those enjoyed by Thomas Lombe. The real return came only four decades later, after Paul's death, when Richard Arkwright took Paul's drafting rollers and implemented them, not on circular frames like Lombe's Italian silk throwing machines, but on linear frames. He did so with more technical support, more determination and more sustained financial backing than Paul. The result was the ultimate macro-invention. It transformed cotton into a mass-market commodity, but its genealogy had a very different character, driven by technological competition between European states and stretching back long before Joel Mokyr's Enlightenment synergy to the luxury industries of late Medieval and Renaissance Italy.

7. Conclusion

Richard Arkwright's water frame was the textile equivalent of the European discovery of the secret of porcelain. It was a means of making something much desired in Europe (and America) that could previously only be imported from Asia. The water frame spun cotton twist – warp yarn – at a commercially viable price. It enabled Lancashire to switch to all-cotton versions of its existing product range – 'the *new* manufactory which are *Cotten* both ways', as the new fabrics were described as early as 1776 – while paving the way for future product innovation.[78] Historians usually present the consequences of the factory mechanization of textiles in terms of quantity rather than quality. This article argues, by contrast, that its most important consequence, at least in the decades immediately after Arkwright's invention, was a transformation in quality. It was a transformation influenced by the taste of colonial American consumers, but achieved by drawing on technologies with

76 See John Styles, 'Fashion and Innovation in Early-Modern Europe', forthcoming in Evelyn Welch, ed., *Fashioning the Early Modern: Creativity and Innovation in Europe, 1500-1800*, Oxford, 2016.

77 For the similarities between Lombe's and Paul's machines, see Richard L. Hills, *Power in the Industrial Revolution*, Manchester, 1970, chapters 2 and 3.

78 Bedfordshire and Luton Archives and Record Service, M10/4/34: Williamson Muniments, correspondence, letters to Mary Williamson, 1775-8, Margaret Cater, Kempston Greys, Bedfordshire, to Mrs. Mary Williamson, London, 17 October 1776.

origins deep in the European history of luxury silk manufacture. The result was a fundamental reconfiguration of what constituted a British cotton textile.[79]

79 My argument here parallels Harley's 'Cotton Textile Prices and the Industrial Revolution'. More broadly, it responds to the call from Trevor Griffiths, Philip Hunt and Patrick O'Brien that scholars of technical innovation in textiles should dispense with 'challenge and response' models and focus instead on market trends; see Trevor Griffiths, Philip Hunt and Patrick O'Brien, 'The Curious History and Imminent Demise of the Challenge and Response Model', in Maxine Berg and Kristine Bruland, eds, *Technological Revolutions in Europe: Historical Perspectives*, Cheltenham, 1998, 133.

Meiji Japan's Encounter with the "English System" for the Prevention of Infectious Disease: The "*Hesperia* Incident" of 1879*

Takeshi Nagashima**

Abstract. In 1879, a cholera epidemic spread gradually over western Japan by the early summer. The Japanese government urgently issued an order to stop all vessels coming from cholera epidemic regions, including those in western Japan, to the Yokohama port in Tokyo Bay for ten days for quarantine. But the German ship *Hesperia* broke the order and this resulted in a dispute between the Japanese government and the German and British representatives. Although Britain was not a party directly concerned, the consistent opposition by the British Minister Harry Parkes to Japan's maritime quarantine policy gave the impression that he was the mastermind of this '*Hesperia* incident'. For many of the Japanese, Britain's claims looked like an outrage of the free-trade imperialist power, because they felt that the British were ignoring public health by rejecting the quarantine order. But Parkes's objection was not simply a neglect of the prevention of infectious disease in favour of free trade. He urged the Japanese government to adopt the medical inspection system instead. It was a chief element of the 'English system' of infectious disease control which Britain was trying to promote at the international sanitary conferences. The English system consisted also of interventionist, costly measures such as compulsory isolation of infected patients, thorough surveillance of sanitary environment, and provision of water-related infrastructure, but was believed to be more 'liberal' than conventional quarantine. The dispute ended in Parkes's advantage: the Japanese government was obliged to suspend the enforcement of maritime quarantine, as it had failed to stop the diffusion of cholera to eastern Japan. This article argues that this kind of successful anti-quarantine campaign consolidated Britain's confidence in their 'liberal' public health reform, distinguishing themselves from 'autocratic' states obsessed with conventional quarantine measures.

Introduction

In his well-known article, "Anticontagionism between 1821 and 1867", published originally in 1948, the medical historian Erwin Ackerknecht classified public health systems in the nineteenth century into two types, based on etiological theories. According to this classification, the 'authoritarian' states of Central and Eastern Europe were likely to adopt coercive quarantine measures restricting the individual's freedom based on the contagion theory, whereas more 'liberal' countries such as Britain and the United States were cautious about state intervention in the private sphere, where the miasma theory was dominant and

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emphasis was placed more on environmental reforms. In particular, Britain, seeking freedoms of movement and trade, was clearly opposed to the adoption of maritime quarantine with regard to cholera at the International Sanitary Conference of 1851, held in Paris.[1]

This classic dichotomous understanding of public health systems seems rather simplistic and has been subject to reconsiderations by historians afterwards. Roy MacLeod and Patrick Carroll, for example, have pointed out the continuity from the eighteenth century Austrian concept of medical police to the idea of 'state medicine' in nineteenth century Britain.[2] Meanwhile, Peter Baldwin has argued that differences in public health policy cannot be reduced to politico-economic regimes and that geo-epidemiological factors should be taken into account.[3] It can be said that this classification itself has now been historicized. Ackerknecht, who had fled from Nazi Germany to the United States in the 1930s, seems to have been sympathetic to anti-contagionism, which was thought to be associated with the relatively sound development of civil society and liberalism in countries like Britain and the United States.

This paper is not going into a full reconsideration of the Ackerknecht thesis, but is concerned with how such a dichotomous understanding of 'liberal' and 'authoritarian' public health systems was moulded historically. It explores the process in which the British increasingly became confident in their 'liberal' public health reform through the late Victorian period, distinguishing themselves from the foreign countries which stuck to 'autocratic', 'crude' measures such as maritime quarantine for infectious disease control. Such self-confidence in 'liberal' public health reforms can be seen, for example, in the attitude of British diplomats when the '*Hesperia* incident' took place at the port of Yokohama in Japan in 1879.

The *Hesperia* Incident

The *Hesperia* is the name of a German ship. The *Hesperia* incident was a dispute between the Japanese government and the German and British representatives over the quarantine of that ship. Before looking into the incident itself, let us first look at its historical background.

The first record of a cholera epidemic in Japan was in 1822, when the first worldwide pandemic reached there. It is thought to have entered from Nagasaki, the only port open to European (Dutch) vessels under the national seclusion policy of the Tokugawa Shogunate. In 1854, the Shogun government was obliged to abandon the seclusion policy, and

1 E. Ackerknecht, "Anticontagionism between 1821 and 1867", originally published in 1948, reprinted in *International Journal of Epidemiology*, 38, 2009, 7-21.

2 R. M. MacLeod, "The Anatomy of State Medicine: Concept and Application", in F. N. L. Poynter (ed.), *Medicine and Science in the1860s*, London, 1968, 119-227; P. E. Carroll, "Medical Police and the History of Public Health", *Medical History*, 46, 2002, 461-94.

3 P. Baldwin, *Contagion and the State in Europe, 1830-1930*, Cambridge, 1998, 24-36, 222-6.

subsequently forced to sign international treaties with the Western Powers including Britain and Prussia (Imperial Germany, after 1871).[4] They were unequal treaties to approve the Western Powers' extraterritoriality in Japan. Following these treaties, the number of open ports increased. Cholera severely attacked the country again in 1858 and 1862.[5]

The Tokugawa Shogunate was replaced by the Meiji government in 1868. The Meiji government began to pursue westernization policy under the slogan 'Civilization and Enlightenment (*bunmei-kaika*)'. In the sphere of health and medicine, the Sanitary Bureau was established in the Home Ministry as the central public health authority in 1875. The Bureau tried eagerly to introduce western systems for public health.

Cholera, which had been silent in Japan for fifteen years, broke out in 1877. The pathogen seems to have been brought by foreign ships to the ports of Yokohama and Nagasaki in September of that year. This urged the government to issue the Instructions for the Prevention of Cholera, which prescribed domestic measures such as compulsory notification, inspection, disinfection and isolation of infected patients.[6] In 1878, the government set up a committee chaired by the Foreign Vice-minister Mori Arinori to discuss the introduction of maritime quarantine applicable to foreign vessels. The committee consisted not only of Japanese officials but also of Western medical doctors, including William Anderson from Britain, D. B. Simmons from the US and Hermann Gutschow from Germany. They had several meetings but failed to reach an agreement by the end of that year.[7]

In March 1879, the first cholera case of that year was reported in a small coastal village in Ehime Prefecture, on the island of Shikoku, western Japan. By the early summer, the epidemic gradually spread over western Japan, including Hyogo Prefecture where the international port of Kobe was located. The Japanese government urgently issued the Provisional Ordinance for the Prevention of Cholera on 28 June for domestic preventive measures. Then, as for maritime quarantine, a provisional order was issued on 3 July to stop all vessels coming from cholera epidemic regions, including Kobe, to the Yokohama port in Tokyo Bay for ten days at the Nagaura (Yokosuka) quarantine station near the port. This was intended to prevent the epidemic from spreading to Eastern Japan, especially Tokyo, the country's capital.[8]

While the Japanese government proceeded with those legal procedures, the German commercial ship *Hesperia*, having sailed from Europe via China and the port of Kobe, was approaching to the port of Yokohama. It was on 11 July that the *Hesperia* arrived in the

4 The Anglo-Japanese Friendship Treaty (1854); The Anglo-Japanese Treaty of Amity and Commerce (1858); The Prussian-Japanese Treaty of Amity, Commerce and Navigation (1860).

5 For a general account of the history of cholera, see S. Yamamoto, *Nihon Cholera-shi* [*A History of Cholera in Japan*], Tokyo, 1982.

6 Japanese Ministry of Home Affairs, *Report of the Director of the Central Sanitary Bureau to H.E. the Minister of the Home Department on Choleraic Diseases in Japan during the 10th Year of Meiji*, 1877, 37-42.

7 Public Health Bureau, Japanese Ministry of Health and Welfare, *Ken-eki Seido Hyakunen-shi* [*A 100-year History of Quarantine Systems*], Tokyo, 1981, 22-5.

8 *Ibid.*, 26-30.

Nagaura quarantine station. It seems that, at first, the crew of the German ship and the German legation led by the Minister Karl von Eisendecher were cooperative with the Japanese authorities. The German Minister voluntarily sent the German doctor Hermann Gutschow to the ship for medical inspection. It turned out that there were no cholera patients on board. But, then, disagreements arose over how long the ship should be detained. While the Japanese authorities insisted on a ten-day detention according to the order of 3rd July, the German side claimed that the ship should be released immediately as there were no patients on board at present. On 14 July, Eisendecher sent the German navy gunboat *Wolf* to Nagaura, and guarded by the gunboat, the *Hesperia* safely entered the Yokohama port.[9] The Japanese Foreign Minister Terashima Munenori denounced the Germans' forceful action, but the Japanese authorities were unable to stop it.[10]

In the meantime, among the representatives of the Western treaty powers in Japan, the fiercest critic of Japan's maritime quarantine policy was the British Minister Sir Harry Parkes, who had been in the post since 1865.[11] Since the issue of the provisional order of 3 July, he repeatedly sent letters to Terashima, insisting that it should not be applied to British subjects.[12] When the *Hesperia* incident took place, although Britain was not a party directly concerned, Parkes's consistent hard-line opposition to the quarantine regulations gave the impression that he was the mastermind of the incident.

The attitude of the German and British delegates toward the quarantine regulations seemed to be an 'outrage of the treaty powers' in the eyes of the Japanese government and the public. The newspaper *Choya Shimbun*, for example, published an article titled 'The self-interestedness of the British' on 20 July. The *Choya Shimbun* was a newspaper advocating the Freedom and Civil Rights (*Jiyu-Minken*) Movement and often took a critical posture to the Meiji government's policies. But, on this issue, it supported the government. While acknowledging that free trade between Japan and Britain could increase friendly relations between the two nations, the article accused Britain's anti-quarantine stance as harming the friendship. The article even asserted that the British prioritized their trade interests over the health of Japanese people. Parkes's uncooperative attitude was compared with the cooperative attitude of the US Minister in Japan, John Bingham, who had expressed to the Japanese Foreign Minister that American ships should follow Japan's quarantine regulations.[13]

The Foreign Minister Terashima Munenori was a medical doctor-turned- politician from the Satsuma (Kagoshima) Domain. He could speak English to some extent, as he had been to London twice as a member of diplomatic envoys of the Tokugawa Shogunate (1862) and of

9 For a detailed account of the incident, see H. Fuess, "Informal Imperialism and the 1879 Hesperia Incident: Containing Cholera and Challenging Extraterritoriality in Japan", *Japan Review*, 27, 2014, 103-40.

10 K. von Eisendecher to M. Terashima, July 11, 12, 21, 1879; Terashima to Eisendecher, July 23, 1879, reprinted in Japanese Ministry of Foreign Affairs, *Nihon Gaiko Bunsho* [*Documents on Japanese Foreign Policy*] (hereafter, cited as *NGB*), vol. 12 (1879), Tokyo, 1949, 294, 302-9, 314-5, 317.

11 J. Wells, "Parkes, Sir Harry Smith (1828–1885)", *Oxford Dictionary of National Biography*, Oxford, 2004, 768-73

12 Harry Parkes to Terashima, July 12, 14, 18, 19, 26, in *NGB*, 294-9, 310-3, 323-7.

13 "Eijin no Shikyoku", *The Choya Shimbun*, July 20, 1879.

the Satsuma Domain (1865). During his second stay in London, he seems to have been impressed by the relatively moderate diplomatic policy of the Liberal government at the time led by John Russell and Earl of Clarendon.[14] The biggest task assigned to Terashima, who became Foreign Minister in 1873, was to remove the extraterritoriality and regain tariff autonomy, revising the unequal treaties with the Great Powers. In this respect, it was quite important for him to persuade the Great Powers to observe Japan's quarantine regulations. It was thought, if the persuasion succeeded, it could be a significant step forward to the practical removal of the extraterritoriality. But actually Terashima failed to persuade Britain, Germany and France. In September 1879, two months after the *Hesperia* incident, he was obliged to resign the Foreign Minister for that diplomatic stalemate.[15]

The *Hesperia* incident is not a historical event that everyone knows in Japan today. But several historians have referred to it as a symbolic incident in Meiji Japan's diplomatic history, composed largely of a series of frustrated negotiations with the Great Powers for revision of the unequal treaties.[16] In such historical narratives, the villain is often Harry Parkes who pushed Britain's free trade imperialist claims. Thus, many of historical works referring to the *Hesperia* incident and Meiji Japan's struggle for maritime quarantine have tended to be critical of Britain's anti-quarantine stance, assuming the same tone of argument as that of *the Choya* newspaper: Ignoring the importance of the prevention of cholera and health risks of the Japanese people, Britain gave priority to the protection of their extraterritoriality and trade interests. From a perspective of the history of public health, however, we can have a slightly different view of the incident.[17] The rest of the paper reconsiders whether Britain's anti-quarantine automatically meant a neglect of infectious disease prevention, in the light of recent historical literature on international public health.

The *Hesperia* incident has recently been re-examined by Harold Fuess. Paying attention to international contexts surrounding East Asia at that time, he has explored the conflict of views and interests not only between Japanese government officials and the representatives of the Western treaty powers but also between those treaty powers over the issues of extraterritoriality and anti-cholera measures extensively.[18] While receiving many hints from Fuess's work, which has added substantially to previous scholarship on the incident, this paper is to focus more exclusively on the preventive measures which the British representatives pushed as a more 'liberal' alternative to maritime quarantine. By doing so, it

14 T. Inuzuka, *Terashima Munenori*, Tokyo, 1990, 103-4.

15 *Ibid.*, 223.

16 See e.g. K. Inoue, *Joyaku Kaisei: Meiji no Minzoku Mondai* [*Revision of the Unequal Treaties: A National Problem of the Meiji Era*], Tokyo, 1968; S. Imai, "Hesperia-go Jiken ni tsuite: Ken-eki Kisoku Shimatsu [*On the Hesperia Incident: The Consequence of the Quarantine Regulations*]", *Rekishi-Kyoiku*, 12, 1964, 35-40.

17 More recent works dealing with the public health aspect of Meiji Japan's maritime quarantine include, K. Ozaki, "Bankoku Eisei Kaigi to Kindai Nihon [The International Sanitary Conferences and Modern Japan]", *Nihonshi-Kenkyu*, 439, 1999, 120-44; K. Wakimura, "Kokusai Hoken no Tanjo [The Birth of International Public Health: The Cholera Pandemics and Quarantine in the 19th Century]", in K. Endo (ed.), *Global Governance no Sai-zensen,* Tokyo, 2008, 180-200; J-R. Kim, "The Borderline of 'Empire': Japanese Maritime Quarantine in Busan c.1876–1910", *Medical History*, 57, 2013, 226-48.

18 Fuess, *op. cit.*, esp. 114-25.

tries to illuminate the process in which Britain became increasingly confident in their 'liberal' public health policy internationally through the late nineteenth century.

The English System

Quarantine is said to originate in Medieval Mediterranean ports at the time of Black Death, where ships were detained for forty days before entering. Later, the term maritime quarantine came to refer to the detention of ships coming from infected areas for a designated period. Under conventional quarantine procedures, passengers were not allowed to disembark during the period, even if they were not ill at present, as they were deemed to pose a risk to public health.

Opposition to quarantine in Britain can be traced back at least to the late eighteenth century. In addition to objections from the standpoint of mercantile interests, concerns about humane treatment and individual liberty had been expressed by philanthropic reformers such as John Howard who is known as a prison reformer.[19] But it should be noted that Britain maintained a maritime quarantine system throughout the nineteenth century. The Quarantine Act of 1825, which was effective until 1896, prescribed the quarantine of all vessels which travelled from ports where plague, yellow fever or other infectious disease was known to exist. The duty of implementation of quarantine at the port was assigned to the Custom Service, under the supervision of the Privy Council. In this Act, cholera was not specified as a quarantineable disease. When cholera epidemics threatened (and actually hit) Britain in 1831, 1848 and 1854, the Privy Council temporarily added cholera to the list of qurantineable diseases by issuing special orders. However, quarantine became increasingly unpopular, due to its failure to prevent cholera epidemics and the rise of the doctrines of free trade and *laissez-faire*. Thus, Britain turned to be an anti-quarantine nation by the mid-nineteenth century.[20]

In the meantime, administrative systems for interior public health developed gradually. It was Edwin Chadwick's report of 1842 that urged the need for government policy to improve sanitary conditions.[21] In 1848, the first Public Health Act was introduced in England, which created the General Board of Health to urge local authorities to undertake sanitary reforms. But the central state interventionist inclination of Chadwick's plans provoked much opposition. Chadwick was obliged to retire from the General Board of Health in 1854, and the Board itself was abolished in 1858. However, this did not necessarily mean that sanitary reforms came to a standstill. Independently of the central government, there were municipal authorities which were proceeding with reforms by employing Medical

19 J. Booker, *Maritime Quarantine: The British Experience, c. 1650–1900*, Aldershot, 2007, 217-22.

20 K. Maglen, "The First Line of Defence: British Quarantine and the Port Sanitary Authorities in the Nineteenth Century", *Social History of Medicine*, 15, 2002, 417-9.

21 M. W. Flinn (ed.), E. Chadwick, *Report on the Sanitary Condition of the Labouring Population of Gt. Britain*, 1842, reprinted, Edinburgh, 1965.

Officers of Health. Then, how to extend the pioneering measures adopted by those municipal authorities to a nationwide scale was discussed at the Royal Sanitary Commission of 1869-71. Following the recommendations of the Royal Commission, a new public health administrative machinery was established in England under the provisions of the Local Government Act of 1871 and Public Health Act of 1872. It consisted of the local councils designated as 'sanitary authorities' and the Local Government Board as the central supervisory department. At the local level, every sanitary authority was required to appoint a Medical Officer of Health. Those local Medical Officers became increasingly professional through the late-Victorian period as specialist knowledge of preventive medicine increased due to developments in epidemiology, as well as the accumulation of practical experience in their work.[22]

In the context of this paper, it is important to note that the 1872 Public Health Act also provided for the establishment of the 'Port Sanitary Authorities' as a new system for the prevention of infectious diseases other than the permanently quarantineable diseases (plague and yellow fever) coming from abroad. This system was designed to rectify some of the deficiencies of the existing quarantine system, in view of its increasing unpopularity. Instead of keeping the whole ship with all passengers in detention throughout the designated period, the new system was that rigorous medical inspections were to be conducted on board at first by qualified medical officers and then only those who were infected or potentially infectious should be taken to isolation hospitals on shore and kept in detention there. Under the supervision of the Local Government Board, the Port Sanitary Authorities were assigned the duties to appoint the Port Medical Officers to conduct inspections on board, to establish isolation hospitals, and to proceed with sanitary improvements in their port districts.[23]

In short, Britain tried to rationalise quarantine procedures for infectious diseases other than plague and yellow fever, by specifying risks of infection on board. This so-called 'medical inspection' system was to reduce hindrances to free passage and free trade by simplifying quarantine procedures. But it was to be accompanied by the provision of isolation hospitals at the ports, and furthermore, by the progress of interior sanitary reforms and anti-infectious disease measures nationwide under the provisions of the Public Health Act. It can not necessarily be said that Britain's public health system on the whole became less interventionist due to this replacement of the conventional quarantine procedures by the new system.[24] In fact, there were concerns about the interventionist aspect of the Public Health Acts of 1872 and of 1875 (which consolidated the 1872 Act) at their introduction, and the sanitary authorities faced much subsequent opposition in carrying out them at the local level.[25]

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22 D. Porter, *Health, Civilization and the State*, London, 1999, 138-9; A. Hardy, *Health and Medicine in Britain since 1860*, Basingstoke, 2001, 29-39.

23 A. Hardy, "Cholera, Quarantine and the English Preventive System, 1850–1895", *Medical History*, 37, 1993, 256; Maglen, "The First Line of Defence", 421-5

24 Baldwin, *op. cit.*, 554.

25 L. Goldman, *Science, Reform, and Politics in Victorian Britain: The Social Science Association 1857-1886*, Cambridge, 2002, 192-3; M. J. Daunton, 'Health and Housing in Victorian London', in W. F. Bynum and R. Porter

The combination of medical inspection, disinfection, provision of isolation hospitals, and sanitary improvements on shore, which was intended as an alternative to the conventional quarantine procedures, came to be known to contemporaries as the 'English system'.[26] Why it was called 'English' instead of 'British' is probably because the Public Health Act of 1872 which created the system was an English statute (applied also to Wales), while the same system was adopted also in Scottish ports.

Krista Maglen, in her recent pioneering study on the English system, has pointed out that, with liberal desire to facilitate the movement of goods and people, infectious disease control under the English system was concerned basically with the condition of places (e.g. 'diseased', 'unsanitary'). But this did not necessarily mean that it was concerned only with the environment and unconcerned with individuals. The transition of public health from environmentally centred policies to those focused more on individuals was already under way in Britain during the 1870s. Thus, person-centred approaches such as notification, medical inspection, disinfection, and isolation of the sick constituted an important part of the system.[27]

The merits of the English system were pleaded by the British delegates at the International Sanitary Conference held at Vienna in 1874. It was the first international sanitary conference after the opening of the Suez Canal in 1869. Like previous conferences, one of the main focuses of discussion at this conference was how to build an international consensus to prevent the spread of cholera epidemics. Broadly speaking, the differences of opinion were between the Mediterranean countries which favoured maritime quarantine, and the north-western European countries which supported the English system. But a notable exception to this generalization was Italy, which was against quarantine. Some countries had a divergence of opinion within themselves. In France, for example, while the Mediterranean ports supported quarantine, those of the English Channel were against.[28] Even within the British Empire, there were differences. The Bombay Government was cautious in abandoning maritime quarantine, unlike British Government in London and the Government of India in Calcutta.[29] In the end, the pro-quarantine and anti-quarantine factions failed to reconcile their differences at the Vienna Conference. Its committee on quarantine proposed that both quarantine and the English system should be regarded as justified and that each country should be free to choose between them. This proposal was carried unanimously at the last meeting of the conference.

Of the two parallel ideas adopted in the Vienna Conference, the Japanese government

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(eds.), *Living and Dying in London* (*Medical History*, suppl. 11), London, 126-44.

26 P. Bourdelais, *Epidemics Laid Low*, Baltimore, 2006, 67-86; K. Maglen, *The English System: Quarantine, Immigration and the Making of a Port Sanitary Zone*, Manchester, 2014, 8-9.

27 Maglen, *The English System*, 10, 64-5. Maglen's study has illuminated that demands for such person-centred approaches increased even further when the problem of migration came to the fore at British ports around the turn of the twentieth century.

28 N. Howard-Jones, "The Scientific Background of the International Sanitary Conferences, 1851-1938," WHO Chron., 28, 1974, 495-508.

29 M. Harrison, *Contagion: How Commerce Has Spread Disease*, New Haven, 2012, 156.

took the view that maritime quarantine was more complete than the English system for the prevention of cholera. On the other hand, the German actions after the arrival of the *Hesperia* in Yokohama, starting with Dr Gutschow's medical inspection on board, were to follow the procedures of the English system.

The British Minister as a Salesman of the English System

The British Minister Harry Parkes did not explicitly oppose the adoption of maritime quarantine by the Japanese government but its application to British ships and British subjects without the consent of the British consulate. In his letter to the Foreign Minister Terashima on 12 July, a day after the *Hesperia*'s arrival, Parkes explained why he was opposed to the provisional order on quarantine issued by the Japanese government on 3 July, according to which the *Hesperia* was stopped. He pointed out that it lacked clauses about supervising authority at the central level, and the personnel and institutions at the port to carry out proper quarantine procedures, and that this could result in an arbitrary and rough enforcement of quarantine. He was concerned especially that there were no clear prescriptions about the measures to be taken after cholera cases were detected on board. Parkes wrote, it was 'inhumane' to treat healthy passengers in the same way as the infected throughout the designated detention period. Thus, he concluded that it would be difficult to instruct British subjects to observe such 'incomplete' quarantine regulations.[30] Instead, he promised that the English system of medical inspection should be applied rigorously to British ships and subjects.[31]

Parkes questioned Japan's quarantine policy on both moral and practical grounds. He reported to Lord Salisbury, the Foreign Secretary of the Disraeli Government at the time, that his opposition to Japan's quarantine was 'to protect British subjects from the useless vexations' and 'from the unnecessary if not arbitrary interference with their liberties'.[32]

Although no British passengers were on the *Hesperia*, British subjects were among those who were detained in the *Genkai-maru*, a Japanese mail steamer owned by Mitsubishi Shipping Line (later, Nippon Yusen), which had sailed from Shanghai via Kobe to Tokyo Bay and entered the Nagaura quarantine station on 3 July. Citing the letters from the British subjects detained in the ship, Parkes pointed out the 'unjust', 'ineffective', and 'partial' manner in which the quarantine of the *Genkai-maru* was conducted.[33] According to the letters, although it had been confirmed by medical inspection that there was no sign of cholera on board, foreigners were kept in strict detention, while some Japanese passengers, including the Iwasakis, family members of the president of the Mitsubishi Company, were

30 Parkes to Terashima, July 12, in *NGB*, 294-9.
31 Parkes to Terashima, July 14, in *NGB*, 310-1.
32 TNA (The National Archives, UK). FO 47/247, Harry Parkes to Marquis of Salisbury, no.144, August 11, 1879.
33 TNA. FO 47/247, Parkes to Salisbury, no.143, August 11, 1879.

allowed to leave the ship.[34]

The Japanese government issued a more formal statute titled the 'Regulations for the Prevention of Cholera at Sea Ports' on 14 July, to replace the provisional order of 3 July. This was slightly modified once again and reissued as the 'Regulations for Quarantine' on 21st of the same month. While the Japanese government did not give up the enforcement of quarantine to foreigners, the new set of Regulations was to comply with some of the complaints from Parkes and other foreign representatives. The detention period was reduced from ten to seven days. It also prescribed to set up the Central Board of Health (*Chūou Eisei-kai)* as an advisory body to the government, whose membership should include not only Japanese but also foreign medical doctors.[35]

In writing to Terashima on 26 July, while acknowledging the Japanese government's effort to revise the Regulations, Parkes expressed a doubt even more fundamental about Japan's quarantine policy. He questioned whether the enforcement of quarantine on the ships from Kobe to Yokohama alone could really prevent the diffusion of cholera, in view that the disease seemed already to have spread from western to eastern Japan by early July.[36] In fact, scattered cases had already been reported in Kanagawa Prefecture, where the port of Yokohama is located, on 18 June, and also in the neighbouring Tokyo Prefecture on 19 June (Table 1). It was before the opening of the Tokaido railway line between Tokyo and Kobe, but there were numerous other routes of transportation by land and by water across the country. The Japanese government attempted to implement land quarantine on the main roads leading to Yokohama and Tokyo, but the numerous byways were left unguarded. The land quarantine stations seem to have confused the traffic, and complaints were addressed not only from foreigners but also from Japanese people.[37]

Parkes tried to convince Terashima of the uselessness of conventional quarantine, and recommended that Japan should adopt the English system of medical inspection.[38] Similarly, the pro-British newspaper *Japan Daily Herald* referred to the possibility that cholera was an endemic disease indigenous to Japan. Actually, in view of the fact that the first cholera case reported in 1879 was in a remote fishing village in Ehime Prefecture, there is a possibility that the cholera pathogen had somehow stayed in hiding within the country after the end of the previous epidemic (1877-78) in Japan, rather than raiding from outside. If this was the case, the quarantine of foreign vessels could not be a decisive measure. *The Japan Daily Herald* argued that 'unfortunately, quarantine is now a useless precaution,' and suggested instead that 'domiciliary inspection and isolation should be prosecuted with energy'.[39]

34 Parkes to Terashima, July 12, in *NGB*, 297.
35 Terashima to the foreign representatives, July 21, 1879, in *NGB*, 316.
36 Parkes to Terashima, July 26, in *NGB*, 323-7.
37 TNA. FO 47/247, Parkes to Salisbury, no.143, August 11, 1879; Yamamoto, *op. cit.*, 49-50.
38 Parkes to Terashima, July 26, in *NGB*, 324-5.
39 *The Japan Daily Herald*, August 5, 1879.

Table 1. Dates of the first outbreak of cholera, 1879

Prefecture	Month	Day	Prefecture	Month	Day
Ehime	March	14	Shizuoka	June	20
Oita	April	17	Shiga	June	20
Kagoshima	April	29	Chiba	June	24
Okinawa	May	6	Yamanashi	June	24
Fukuoka	May	14	Aichi	June	25
Yamaguchi	May	15	Ibaraki	June	28
Osaka	May	16	Kumamoto	June	28
Hiroshima	May	21	Gifu	June	30
Okayama	May	22	Gunma	July	2
Wakayama	May	25	Niigata	July	7
Hyogo (Kobe)	May	28	Yamagata	July	7
Kochi	June	2	Saitama	July	26
Kyoto	June	5	Akita	July	31
Nagasaki	June	8	Tochigi	August	1
Sakai	June	9	Aomori	August	6
Mie	June	15	Nagano	August	11
Ishikawa	June	15	Fukushima	August	11
Shimane	June	17	Iwate	August	31
Kanagawa (Yokohama)	**June**	**18**	Miyagi	September	14
Tokyo	**June**	**19**			

Source: *Report of the Director of the Central Sanitary Bureau to His Excellency, the Minister of the Home Department, upon cholera in Japan: in the 12th year of Meiji,* 1879, Table A

By early August, the incidence of cholera had become more conspicuous in the Tokyo-Yokohama area. It was obvious not only to the British representatives but also to the Japanese authorities that the quarantine measures were no longer useful. On 7 August, the Japanese government was obliged to suspend the enforcement of the Regulations for Quarantine, declaring officially that Yokohama and Tokyo became 'infected zones'.[40] Thus, Parkes was able to write confidently to Lord Salisbury that he was successful in convincing the Japanese government:

> 'the Japanese Government were obliged to abandon quarantine in consequence of their inability to carry it out, and to resort instead to medical inspection. The latter system was all that the circumstances of the case required, and its adoption has been urged by me…'[41]

It seems that there was also a diplomatic reason for Parkes's eagerness to persuade the Japanese government. At that time, the British government was concerned about the extension of diplomatic influence of the United States over Japan. The United States was relatively sympathetic to Japan's aspiration for the revision of unequal treaties. In the course

40 Japanese Ministry of Home Affairs, *Report of the Director of the Central Sanitary Bureau to His Excellency, the Minister of the Home Department upon Cholera in Japan*, 1879, 26; TNA. FO. 47/247, Parkes to Salisbury, no.144, August 11, 1879.

41 TNA. FO 47/247, Parkes to Salisbury, no.146, August 15, 1879.

of negotiations in 1878 with Ueno Kagenori, the Japanese Minister in London, for revision of the Anglo-Japanese treaty, the Foreign Secretary Salisbury came to fear that the rise of American influence would lead Japan to American-style protectionist policies. Salisbury rejected Ueno's proposals for the recovery of Japan's tariff autonomy on the grounds that free trade was essential to Japan's progress and prosperity.[42] Over the issues of quarantine, too, the U.S. Minister to Japan, John Bingham, was more sympathetic to the Japanese government than his British counterpart. In addition, when the *Hesperia* incident took place, the former U.S. President General Ulysses Grant, known as a hero of the Civil War, was staying in Japan as a state guest for the amity between the two nations. Under the circumstances, it was an important diplomatic mission for Parkes to check the influence of the United States, by convincing the Japanese government of the merit of the English system of disease prevention which was supposed to be compatible with free trade.[43]

Need for Sanitary Reform

The epidemic of 1879 turned out to be the biggest outbreak in the history of cholera in modern Japan. The number of reported cholera cases amounted to over 162 thousands during 1879 in Japan as a whole. That of reported deaths was about 105 thousands: the fatality rate was 65 per cent.

Table 2 has to be regarded with caution in respect to its reliability. It was before the discovery of the cholera bacillus (by Robert Koch, 1883), and the early years of western medicine and of the notification system in Japan. There might have been not only under-reporting but also 'over-reporting'. As the population statistics at that time are also thought to be highly unreliable, the morbidity data is particularly dubious. Yet, with the table, we can see that the epidemic spread almost all over the country. With hindsight, it is unlikely that the introduction of the quarantine regulations in early July, if strictly executed without violations, could have stopped the diffusion.

In 1879, the cholera bacillus was unknown. But it was known that cholera could be water-borne. It was John Snow in the mid-nineteenth century who first pointed out its relationship with contaminated water, based on epidemiological studies in London. Much emphasis was placed on improvements of water-supply and sewer systems in Britain's public health policy. As has been mentioned earlier, the progress of such interior sanitary environmental reforms was thought to be a requisite for the English system of disease control.

42 G. Daniels, *Sir Harry Parkes: British Representative in Japan 1865-1883*, London, 1996, 177.

43 S. Lane-Poole, *The Life of Sir Harry Parkes: Sometime Her Majesty's Minister to China & Japan, 1854-1931*, 1894, reprinted in 1973, 278-80.

Table 2. Reported number of cholera cases, by prefectures, 1879

Regions	Prefectures	Number of Patients	Morbidity (per 1,000)	Regions	Prefectures	Number of Patients	Morbidity (per 1,000)
					Mie	1,575	7.63
Southern islands	Okinawa	11,196	55.03		Aichi	1,928	4.56
	Nagaskai	6,280	6.09	Tokai-Chubu	Gifu	453	3.88
	Kagoshima	1,749			Nagano	513	6.5
Kyushu	Kumamoto	6,714	11.9		Shizuoka	1,506	7.02
	Fukuoka	4,745	8.33		Yamanashi	1,036	8.86
	Oita	5,274	11.68		Kanagawa	2,120	6.42
Shikoku	Ehime	14,105	13.34		Tokyo	2,236	3.13
	Kochi	4,960	8.06		Chiba	1,075	4.29
	Yamaguchi	5,786	8.64	Kanto	Ibaraki	509	3.15
Chugoku	Shimane	3,818	9.06		Saitama	635	3.81
	Hiroshima	6,472	7.71		Gunma	165	1.91
	Okayama	9,085	13.33		Tochigi	780	1.22
	Hyogo	8,991	11.56		Fukushima	498	2.99
	Osaka	9,882	18.59		Miyagi	91	6.63
Kansai	Sakai	5,414	9.81	Tohoku	Iwate	47	9.98
	Wakayama	2,505	8.43		Yamagata	1,679	8.16
	Kyoto	1,404	1.73		Akita	916	7.03
	Shiga	896	4.44		Aomori	765	5.72
Hokuriku	Ishikawa	29,808	25.94	Hokkaido	Kaitaku-shi	490	9.73
	Niigata	5,229	11.11	Army & Navy		417	
				Japan	**Total**	**162,637**	**10.15**

Source: *Report of the Director of the Central Sanitary Bureau to His Excellency, the Minister of the Home Department, upon cholera in Japan: in the 12th year of Meiji,* 1879, Tables B and C.

It is therefore understandable that Parkes, from a British point of view, pointed to the insanitary conditions in Japanese cities as the ultimate cause for the widespread diffusion of cholera. In his view, Osaka, adjacent to Kobe, was 'perhaps, the worst of these – it lies very low, and its drainage is more defective than that of many other Japanese towns in all of which, however, ordinary sanitary precautions are deplorably neglected… The sanitary condition of parts of Yedo [Tokyo] is not superior to that of Ozaka [Osaka]'.[44]

In the town of Yokohama, where foreign settlements were located near the port, the defective sanitary conditions had been a source of complaints from Westerners. Yokohama had a waterworks system opened in 1873, but it was vulnerable to contamination due to the partly open channels and wooden, decayed pipes. Although it had been agreed that the Japanese local authorities were responsible for urban sanitary measures in the settlements including water-supply and drainage systems, they were slow to undertake them. When cholera hit the town in 1877, the British consulate, impatient with the inaction of the Japanese authorities, proposed to the other foreign representatives to form a board of public health by foreign settlers themselves for sanitary reforms, together with more urgent anti-cholera measures such as disinfection and isolation of the infected.[45]

44 TNA. FO 47/247, Parkes to Salisbury, no.143, August 11, 1879.

45 T. Ichikawa, "Kindai Nihon no Kaikoba ni okeru Desenbyo Ryuko to Gaikokujin Kyoryuchi [Infectious Disease and

The sanitary officials of the Meiji government, notably Nagayo Sensai, the Director of the Sanitary Bureau of the Home Ministry, were well aware of the need for interior sanitary reforms. But Japan's public health administration was still in its early years and lacked a staff to carry out them properly at the local level. And, due to financial constraints, they were particularly slow to initiate capital-intensive engineering projects such as the construction of modern water supply and sewerage systems.[46] It can be argued that, because the Meiji government officials themselves were aware of the insufficiency of interior sanitary reforms, they had to rely on the strict quarantine measures. But it is difficult to know to what extent Nagayo actually placed his hope on maritime quarantine for the prevention of cholera. In his later autobiographical account, he made little mention of the frustration of quarantine policy in 1879.[47]

Due to the official announcement on 7 August 1879 that Yokohama had become an 'infected zone', the Japanese authorities had to give up the quarantine measures. Accordingly, the Local Board of Health (*Chihou Eisei-kai*) was set up in Yokohama on 11 August, to discuss the prevention of cholera. Its membership included Japanese local government (Kanagawa Prefecture) officials, leaders of neighbourhood units, Japanese medical doctors and the four Western medical doctors, namely, E. Weelers (Britain), H. Gutchow (Germany), A. J. C. Geerts (Holland), and D. B. Simmons (USA). In the Board's meetings, those western doctors took the initiative, and called for the improvements of isolation institutions, waterworks, sewage disposal and so on.[48]

Subsequently, such large-scale sanitary undertakings were proceeded with only slowly due to a variety of difficulties. As for waterworks, the Kanagawa prefectural authority employed Henry S. Palmer, a British Army engineer, as a technical advisor. It was in 1887 that the modern system of water-supply was established in Yokohama, under the guidance of Palmer.[49] At the national level, the Sanitary Bureau of the Home Ministry appointed William K. Burton, another British surveyor, as its special consultant in 1887. He was expected to help local authorities seeking to carry out waterworks and sewerage undertakings across the country.

Conclusion

Unlike the assertions by the *Choya* Newspaper and some diplomatic historians, Parkes's objection to Japan's quarantine regulations during the summer of 1879 was not simply a neglect of the prevention of infectious disease in favour of free trade. For the prevention of

Foreign Settlements in a Port-town in mModern Japan]", *Shigaku-Zasshi*, 113, 2008, 13-4.

46 T. Nagashima and A. Suzuki, "Water-borne Diseases and Modernization: Cases in Japan", V. Scarborough (ed.), *Water History and Humanity*, UNESCO Publishing, Paris (forthcoming).

47 In his autobiography, we can find one sentence referring to maritime quarantine, which is about the British Minister's refusal of quarantine at the cholera epidemic in 1877. S. Nagayo, *Shôkô-shishi* [*Nagoyo's autobiographical narrative*], reprinted in T. Ban, *Tekijuku to Nagayo Sensai* [*The Tekijuku Medical School and Nagayo Sensai*], Osaka, 1987, 210.

48 Ichikawa, *op. cit.*, 16-7.

49 J. Higuchi, *Sofu Palmer* [*My Grandfather Palmer: The Founder of the Modern Waterworks in Yokohama*], Yokohama, 1998, 62-86.

cholera, he urged the Japanese government to adopt the medical inspection system. It was a chief element of the English system of infectious disease control which Britain was trying to promote at the international sanitary conferences. The English system consisted also of highly interventionist, costly measures such as compulsory isolation of infected patients in hospitals, thorough surveillance of sanitary environment, and provision of water-related infrastructure, but was believed to be more humane and rational than conventional quarantine, if operated under a proper, democratic administrative system like the one established in England by the 1872 Public Health Act. Thus, while objecting to the quarantine regulations, Parkes and his staff in Japan demanded the Japanese authorities to consolidate interior preventive medicine and to undertake sanitary environmental reforms.

As Anne Hardy has pointed out, the increasing familiarity with the causes and movements of cholera, together with Britain's success in avoiding cholera epidemics after 1867, seems to have increased support for the English system internationally through the late nineteenth century.[50] It can be argued that successes in anti-quarantine campaigns like the one in Yokohama in 1879 also helped the making of Britain's self-confidence in their 'liberal' public health reform, distinguishing themselves from the 'autocratic' or 'uncivilised' states obsessed with conventional quarantine measures. Of course, this does not necessarily mean that British public health policy was actually 'liberal', or that the confidence was without fluctuations. Krista Maglen has shown that the confidence in the relatively open system at British ports was upset when cholera threatened Western Europe in 1892, and that demands for more rigorous screening of immigrants, who were deemed to pose a risk to public health, increased thereafter.[51]

The English system of infectious disease control that Meiji Japan encountered in the 1870s was certainly designed not to hamper commercial trade, but it was not simply *laissez-faire*. For many of the Japanese, Britain's claims in relation to the *Hesperia* incident looked like an outrage of the free-trade imperialist power, because they felt that the British were ignoring public health by rejecting the quarantine regulations. Meanwhile, for Japan's public health officials, that was rather because the British demanded the interior public health reforms which were impossible for them to attain immediately. But Nagayo Sensai, the Sanitary Bureau Director, acknowledged the merit of the English system of infectious disease control. He is known as an admirer of Britain's public health administration, especially its element of local self-government.[52] Under his guidance, Meiji Japan's struggle with cholera continued through the late nineteenth century.

50 Hardy, "Cholera, Quarantine and the English Preventive System", 251.

51 Maglen, *The English System*, 124-5.

52 T. Nagashima, "Central State Initiative and Local Self-government in Public Health Reform: Late-Victorian England and Meiji Japan in a Comparative Perspective", *Annual Bulletin of the Senshu University Institute of Humanities*, 37, 2007, 45-60.

Law, Agency and Emergency in British Imperial Politics: Conflict between the Government and the King's Court in Bombay in the 1820s

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Abstract. Britain's Indian empire transformed itself in the early nineteenth century: a hybrid commercial empire of port cities became a sovereign 'despotic' rule over the vast inner territories. This article tries to understand the nature of this transition from the perspective of conflict between the rule of law and emergency, emphasising the role of the Indians' legal practices in the structural transformation of imperial judicial politics. As a case study, it looks at two legal cases in Bombay in the 1820s in which the government of the East India Company was challenged by Indian merchants in the King's Court, which was independent from the Company. The first case involves a Parsi merchant going against the Company. He demanded compensation for the Company's breach of contract in the Second Maratha War. The other case is a Hindu merchant's fight against the governor of Bombay and the collector of Poona. The issue was the confiscation of private property as wartime booty during the Third Maratha War. In both cases, the merchants used multiple legal methods to realise their demands, and the King's Court ruled in favour of them. The judges rejected most of the evidence submitted by the government and claimed that the King's Court had the power to check the conduct of government officers in times of war and emergency. So, in Bombay, the government's logic of emergency was denied by the judges' logic of law. But this heightened the government's sense of danger, which was still involved in a series of disturbances and revolts in the Deccan and Gujarat in the 1820s. The government appealed the cases to the Privy Council in London, and the decisions were overturned. This meant that the rule of law was nullified and the logic of emergency was sanctioned in the appellate structure of the empire. By looking at these developments, I argue that the Indians' agency in using the law against the government and the King's Court's support for it resulted in weakening the control of civil law over the government and its officers.

Introduction

Historians have suggested that the mode of colonialism in India crucially changed in the late eighteenth and early nineteenth centuries: hybrid, plural and networked colonial politics centred on maritime coastal cities was transformed into a sovereign, bureaucratic and militarist territorial domination based on 'colonial knowledge'.[1] Legal historians have given

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1 C. A. Bayly, *Imperial Meridian: The British Empire and the World 1780–1830*, Harlow, 1989; Radhika Singha, *A Despotism of Law: Crime and Justice in Early Colonial India*, Oxford, 1998; Robert Travers, *Ideology and Empire in Eighteenth-Century India: The British in Bengal,* Cambridge, 2007; Jon E. Wilson, *The Domination of Strangers: Modern Governance in Eastern India 1780–1835*, Basingstoke, 2008; Philip J. Stern, 'Rethinking Institutional Transformations in the Making of Modern Empire: The East India Company in Madras', *Journal of Colonialism and Colonial History,* 9: 2, 2008.

a fresh insight on this transition by pointing out a parallel development: hybrid and multi-centred legal pluralism in the eighteenth century was transformed into a more state-centred sovereign form of justice in the early nineteenth century.[2] This transition entailed a significant consequence: British colonialism became more despotic in the early nineteenth century. The civil government was subordinated to garrison-state militarism, and the executive was allowed discretion to pursue its fiscal-military imperatives unrestrained by the judiciary.[3] An earlier attitude of enlightenment universalism was replaced by utilitarian liberal authoritarianism, justifying the colonial state's despotic rule which would have been regarded as unconstitutional at home.[4] Understanding the nature of this transition has been one of the most important themes of British imperial history.

The key to understanding this transition is the dilemma of the 'rule of law' and 'emergency'. Political theorists and postcolonial scholars have pointed out that there was no rule of law in the colonies—colonialism was a 'state of exception' in which the colonised were debased to the disposable and exterminable 'bare life'.[5] While some historians counter-argue that the rule of law actually reduced the coerciveness of the British colonial rule,[6] others endorse it by emphasising the vast amount of evidence of everyday violence.[7] But a more persuasive line of argument is offered by Nasser Hussain, who examines the cases of martial law and suspension of habeas corpus in colonial India and argues that the state of emergency was not outside the rule of law but constitutive of it.[8] Lauren Benton and Mark Condos further elaborate that the logic of war and emergency was incorporated into a new conception of the rule of law in nineteenth-century colonies; the state of exception at the moment of conquest was institutionalised in the civil government of the post-conquest era.[9]

The problem of this historiography is that the relationship between the rule of law and emergency has not been sufficiently contextualised, and the driving force of the

2 Lauren Benton, *Law and Colonial Cultures: Legal Regimes in World History 1400–1900*, Cambridge, 2002; Gagan D. S. Sood, 'Sovereign Justice in Precolonial Maritime Asia: The Case of Mayor's Court of Bombay 1726–1798', *Itinerario*, 37: 2, 2013, 46–72. See also, Lisa Ford, *Settler Sovereignty: Jurisdiction and Indigenous People in America and Australia 1788–1836*, Cambridge Mass, 2010.

3 Bayly, *Imperial Meridian*; Douglas M. Peers, *Between Mars and Mammon: Colonial Armies and the Garrison State in India 1819–1835*, London, 1995; Robert J. Smith, 'John Bull's Proconsuls: Military Officers who Administered the British Empire 1815–1840', Kansas State Univ. PhD thesis, 2008; Mark Condos, 'British Military Ideology and Practice in Panjab c. 1849–1920', Cambridge Univ. PhD thesis, 2013.

4 Eric Stokes, *The English Utilitarians and India*, Oxford, 1959; Uday Singh Mehta, *Liberalism and Empire: A Study in Nineteenth-Century British Liberal Thought*, Chicago, 1999; Jennifer Pitts, *A Turn to Empire: The Rise of Imperial Liberalism in Britain and France*, Princeton, 2005; Karuna Mantena, *Alibis of Empire: Henry Maine and the Ends of Liberal Imperialism*, Princeton NJ, 2010.

5 Johan Geertsema, 'Exception, Bare Life and Colonialism', in *Emergencies and the Limits of Legality*, ed. Victor V. Ramraj, Cambridge, 2008, 337–59.

6 R. W. Kostal, *Jurisprudence of Power: Victorian Empire and the Rule of Law*, Oxford, 2005; Martin J. Wiener, *An Empire on Trial: Race, Murder and Justice under British Rule 1870–1935*, Cambridge, 2009.

7 Elizabeth Kolsky, *Colonial Justice in Britain: White Violence and the Rule of Law*, Cambridge, 2010; Jonathan Saha, *Law, Disorder and the Colonial State: Corruption in Burma c.1900*, Basingstoke, 2013.

8 Nasser Hussain, *The Jurisprudence of Emergency: Colonialism and the Rule of Law,* Ann Arbor, 2003.

9 Lauren Benton, *A Search for Sovereignty: Law and Geography in European Empires 1400–1900*, Cambridge, 2010; Condos, 'British Military Ideology and Practice in Panjab'. See also, Elizabeth Kolsky, 'The Colonial Rule of Law and the Legal Regime of Exception: Frontier "Fanaticism" and State Violence in British India', *American Historical Review*, 120: 4, 2015, 1218–46.

transformation remains unclear. Historians have pointed out that the colonial government had a desire to retain power of discretionary intervention in times of emergency, but this is often assumed just by referring to abstract theories of state and state-formation.[10] Besides, although most of the studies have centred on the analysis of the British 'colonial state' as a monolith, the British authority was unstable and fractured in this period, and the conflict within the British was as important as the conflict between the British and the Indians in shaping the future form of governance.[11] Relatedly, while Foucauldian scholars have produced rich scholarship on colonial governmentality (internal exertion of power through knowledge), this should not divert our attention from the dimension of sovereignty (external exertion of power through coercion) and officials' anxiety about it.[12] More attention should be paid to the interactions between multiple actors in practical circumstances which suppressed the rule of law and strengthened the logic of emergency. More specifically, to use A. V. Dicey's criteria, we need to examine how and to what extent the British imperial and colonial governments denied predominance of regular law, exempted their servants from municipal courts, and constructed colonial constitutions which were not based on the natural rights of the subjects.[13]

Recent studies of social history of law in India give us a useful perspective, as they tell us that the agency of the Indians was the driving force of the dynamics of social changes in colonial legal history. The Indians actively used the court of law in business and demanded new legislations, which led to the remodelling of social and economic institutions.[14] The British court was popular as a means of dispute resolution because the British judges could not understand the details of the cases and the Indian litigants could easily manipulate the result.[15] Thus, the social policy of the colonial government often involved complex and protracted negotiations with the Indian groups, particularly in the realms of family, property, charity and caste.[16] The everyday legal practices of Indians shaped the political culture of

10 Hussain, *Jurisprudence of Emergency*; Benton, *Search of Sovereignty*; Mithi Mukherjee, *India in the Shadows of Empire: A Legend and Political History 1774–1950*, Oxford, 2009.

11 Wilson, *Domination of Strangers*; Frederick Cooper and Ann Laura Stoler, eds., *Tensions of Empire: Colonial Cultures in a Bourgeois World*, Berkeley, 1997; Zoë Laidlaw, *Colonial Connections 1815–45: Patronage, the Information Revolution and Colonial Government*, Manchester, 2005.

12 Deana Heath, 'Bureaucracy, Power and Violence in Colonial India', in *Empires and Bureaucracy from Late Antiquity to the Modern World*, ed. Peter Crooks and Tim Parsons, Cambridge, 2016; Jon Wilson, 'The Temperament of Empire: Law and Conquest in Late Nineteenth Century India', in *Subjects, Citizens and Law: Colonial and Postcolonial India*, ed. Gunnel Cederlof and Sanjukta Das Gupta, London, 2016.

13 A. V. Dicey, *Lectures Introductory to the Study of the Law of the Constitution*, ed. J. W. F. Allison, Oxford, 2004.

14 Niles Brimnes, 'Beyond Colonial Law: Indigenous Litigation and the Contestation of Property in the Mayor's Court in Late Eighteenth-Century Madras', *Modern Asian Studies*, 37: 3, 2003, 513–50; Tirthankar Roy, 'Indigo and Law in Colonial India', *Economic History Review,* 64: S1, 2011, 60–75.

15 Pamela G. Price, 'The "Popularity" of the Imperial Courts of Law: Three Views of the Anglo-Indian Legal Encounter', in *European Expansion and Law: The Encounter of European and Indigenous Law in 19th- and 20th-Century Africa and Asia*, ed. W. J. Mommsen and J. A. De Moor, Oxford, 1992, 179–200.

16 Ritu Birla, *Stages of Capital: Law, Culture and Market Governance in Late Colonial India*, Durham 2009; Hiroyuki Kotani, *Indo Shakai Bunkashi Ron: Dento Shakai kara Shokuminchi teki Kindai e* [*Social and Cultural History of India: From 'Traditional' Society to Colonial Modernity*], Tokyo, 2010; Rachel L. Sturman, *The Government of Social Life in Colonial India: Liberalism, Religious Law and Women's Rights*, Cambridge, 2012.

particular legal institutions,[17] as well as their identities.[18] In summary, the social, economic and political life of Indians was deeply embedded in the colonial state's legal framework, and the active participation of the Indians in this 'self-conscious site of contestation' produced changes in colonial legal institutions.[19] Based on these insights, this article emphasises the role of Indian agency and legal practices in provoking the transition to despotism in the colonial judicial structure.

This study looks at two cases in the 1820s in which Bombay merchants and bankers used the King's Court to challenge the government. The King's Court was established by royal charters independently from the East India Company (EIC). It had jurisdiction over Europeans and Indians in the presidency town of Bombay, while the rural districts (*mofussil*) were under the jurisdiction of the Company's Court. However, the Indians in the *mofussil* came to Bombay and instituted suits in the King's Court for various purposes, and the King's Court started to claim their extended jurisdiction, causing frictions with the Company's judicial authorities.[20] The most notorious was the battle between Elijah Impey's Calcutta Supreme Court and Governor Warren Hastings.[21] In this context, the King's Court was an institutional embodiment of legal pluralism.

In the first case, a Parsi merchant sued the government for breach of contract during the Second Maratha War (1803–05). In the second case, a Hindu merchant/banker filed a suit to recover personal property that was confiscated as wartime booty in the Third Maratha War (1817–18). Naturally, the government's conduct in times of war and emergency became the main issue in the court. In both cases, the King's Court ruled in favour of the merchants, the government appealed to the Privy Council in London, and it overturned the decisions in Bombay. Nonetheless, the effect of these cases was not small. The Indians became confident that the King's Court would support their claims, while the government started to fear that their authority would be impaired and a huge amount of losses would be incurred by paying out compensation in the future.

I examine how the merchants tried to realise their demands inside and outside the King's

17 Arthur Mitchell Fraas, ''They have Travailed into a Wrong Latitude': The Laws of England, Indian Settlements and the British Imperial Constitution 1726–1773', Duke Univ. Ph.D thesis, 2011; Abhinav Chandrachud, *An Independent, Colonial Judiciary: A History of the Bombay High Court during the British Raj 1862–1947*, Oxford, 2015; James Jaffe, *Ironies of Colonial Governance: Law, Custom and Justice in Colonial India*, Cambridge, 2015.

18 Mattison Mines, 'Courts of Laws and Styles of Self in Eighteenth-Century Madras: From Hybrid to Colonial Self', *Modern Asian Studies*, 35: 1, 2001, 33–74; Chandra Mallampalli, *Race, Religion and Law in Colonial India: Trials of an Interracial Family*, Cambridge, 2011; Mitra Sharafi, *Law and Identity in Colonial South Asia: Parsi Legal Culture 1772–1947*, Cambridge, 2014.

19 Sandra den Otter, 'Law, Authority and Colonial Rule', in *India and the British Empire*, ed. Douglas M. Peers and Nandini Gooptu, Oxford, 2012; Zoë Laidlaw, 'Breaking Britannia's Bounds? Law, Settlers, and Space in Britain's Imperial Historiography', *Historical Journal*, 55: 3, 2012, 807–30 at 822; Nandini Chatterjee and Lakshmi Subramanian, 'Law and the Spaces of Empire: Introduction to the Special Issue', *Journal of Colonialism and Colonial History*, 15: 1, 2014.

20 The Mayor's Court of Bombay was established in 1726, whose judges were all merchants. The Recorder's Court superseded it in 1796. A barrister was sent from Britain as the recorder, or the chief justice. James Mackintosh was the most famous recorder. The Supreme Court was established in 1823. Three barristers constituted the bench. It was merged with the Company's Court in 1862 in the newly established Bombay High Court. A reliable history of Indian legal institutions is M. P. Jain, *Outlines of Indian Legal and Constitutional History*, 6th edn., New Delhi, 2006.

21 Travers, *Ideology and Empire*.

Court and how the judges and the government responded to it. I contend that the Bombay merchants' use of the King's Court caused a sense of crisis among the government officials. Particularly, they were concerned about the judges' interference in the government's military operation in times of emergency, as the government was still involved in a series of disturbances and revolts in the Deccan and Gujarat in the 1820s. I suggest that the government's sense of danger about the alliance between the Indians and the King's Court in such circumstances was an important context in which the King's Court's logic of law was suppressed and the government's logic of emergency was sanctioned in the appellate structure of the empire. I use the Bombay government's consultations in the India Office Records to reconstruct the process of negotiation in Bombay and to examine the government's discourse. Published reports of the judgements in the *Oriental Herald* and the *Asiatic Journal* are used to analyse the judges' discourse. The Privy Council Printed Papers are used to examine the debate in London.[22]

Articulating the King's Court's Identity: The Case of Cursetjee Manockjee

The first case is *Cursetjee Manockjee v. EIC*. Cursetjee Manockjee, a Parsi merchant, became the government contractor for the provision of rice in December 1802. In the next year, the Second Maratha War broke out. The Bombay government was requested rice by Arthur Wellesley (later Duke of Wellington) for his Madras army, then stationed at Poona. Manockjee sold rice at the market rate, which was two rupees per bag cheaper than the contract rate, because he was told that it was not for public use. However, he later realised that the rice was supplied to the army and demanded compensation in 1804. This conflict, known as 'the rice case', continued for more than 25 years. Manockjee resorted to the King's Court when his claim was repeatedly rejected by the government. He sent several petitions to the government demanding for the principal sum of Rs 1,48,000. The Bombay government only admitted Rs 12,500. Manockjee also sent a petition to the Court of Directors in 1809, but they just increased the amount to Rs 43,500 in 1814. Manockjee finally instituted a suit in the Recorder's Court in 1820.[23]

Manockjee was an important figure in the government's war efforts, as he was also in charge of supplying clothes, foods, military goods and ballast to various government departments.[24] As Randolph Cooper has shown, the EIC's military logistics increasingly relied on Indian-based military manufacturing, and the government had to be sensitive in its relationship with civilian contractors such as Manockjee.[25] Furthermore, he was also

22 The High Court Records of the Maharashtra State Archives including the proceedings of these cases are not catalogued and therefore inaccessible. Newspapers *Bombay Gazette* and *Bombay Courier* do not contain the court proceedings.

23 Gov to Court of Directors [CoD], Bombay Military Letter [BML], 25 Mar. 1825, IOR/L/MIL/3/1725.

24 Bombay Government [Gov] to George Norton, Advocate General, 21 June 1823, Bombay Military Consultations [BMC] 25 June 1823, 3655–60. Unless otherwise stated, references of government consultations are to British Library, India Office Records, Proceedings and Consultations [IOR/P].

25 Randolf G. S. Cooper, 'Beyond Beasts and Bullion: Economic Considerations in Bombay's Military Logistics 1803',

important as a leader of the Parsis in Bombay, who dominated the city's commercial activities, such as shipbuilding and cotton, silk and opium trade with China.[26] He was a member of the Parsi Panchayat ('council of elders') between 1818 and 1845. So the government's relationship with the business community was also potentially destabilised by this prolonged conflict.

The rice case was one of many claims demanded by Manockjee. He used multiple legal methods to realise his demands. First, he filed an equity suit in the Recorder's Court for his distillery claim, which was settled in his favour. Second, he claimed compensation for barracks which he built during the Second Maratha War. It was settled in 1825 by arbitration and the government paid Rs 2,40,000, including 6% compound interest.[27] Third, he filed a suit in the Recorder's Court against the government for his provision of sandals during the war. He demanded Rs 15,000, but the ruling was in favour of the EIC.[28]

The point is that Manockjee was well acquainted with British legal procedures. He could use various legal tools to claim his demands both inside and outside the court. He filed his claims in multiple divisions in the Recorder's Court, and at the same time he sought alternative dispute resolutions outside the court. Arbitration was his preferred method. In the barrack claim, he proposed that he would accept a pension instead of reducing the rate of interest. In the rice case, he proposed that he would accept the result of the trial if the government would abandon their appeal to the Privy Council. In these endeavours, Manockjee collaborated with his attorney, Frederick Ayrton, whose critical attitude towards the government was notorious among government officials.

Manockjee succeeded in the Recorder's Court, but only the second time. It was first examined by Recorder Anthony Buller in 1822. He did not admit compensation for supply to the Madras army and awarded Rs 47,000 with 6% simple interest, or a total Rs 1,00,000. Manockjee applied for a new trial. It was held in 1823 before Edward West, a newly arrived recorder. He was an important figure in Bombay in the 1820s. He experienced a series of conflicts with Governor Mountstuart Elphinstone over various issues such as policing and press regulation.[29] In the trial, West overturned all objections of the government and judged in favour of Manockjee.[30] He awarded the full principal of Rs 1,48,000 with 9% compound interest, which amounted to Rs 5,27,000 in total. It was significantly higher than Buller's

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Modern Asian Studies, 33: 1, 1999, 159–83.

26 Jesse S. Palsetia, *The Parsis of India: Preservation of Identity in Bombay City*, Leiden 2001, chapter 1.

27 The government admitted it not on the ground of law, but as a gratuity. Francis Warden to the Secretary and Translator in the Office of Country Correspondence, 4 Dec. 1809, Appendix to respondent's case, IOR/L/L/Box 620 (92).

28 Gov to CoD, BML, 17 Feb. 1826, IOR/L/MIL/3/1725; Gov to CoD, BML, 24 Feb. 1827, IOR/L/MIL/3/1726. The government was preparing a counterclaim on this case, amounting to Rs 2,25,000, but it was abandoned as the sandal claim was settled in favour of the government.

29 F. D. Drewitt, *Bombay in the Days of George IV: Memoirs of Sir Edward West*, London, 1907. He is now chiefly famous as a political economist. Maxine L. Berg, 'West, Sir Edward (bap. 1782, d. 1828)', *Oxford Dictionary of National Biography*, Oxford, 2004 [*ODNB*] does not give sufficient space for his career in Bombay.

30 The EIC's defence was based on three points: that Manockjee waived his rights under the contracts by acting under Major Moor; that Manockjee lost his remedy by his negligence in bringing the claim in earlier time; and that the purchased rice was supplied for the Madras troop and therefore not within the contract.

former award.[31]

The judgement was characterised by two points. First, West articulated the King's Court's identity in his criticism of the government. He said that the government treated Manockjee 'throughout the whole of the business most unjustly … [and] shamefully'. He emphasised the timidity of Indians facing the tyranny of the EIC. For them, the 'government and despot are synonymous'; he could 'readily believe that nothing but the severe distress, or the grossest injustice' drove him to legal actions.[32] In such a situation, the raison d'être of the King's Court was as follows:

> I cannot allow it to be supposed for a moment that in this Court, the King's Court instituted as it has been by the Crown and Legislature of Great Britain, mainly for the very purpose of giving the natives of this country redress against the Company and the Company's servants, I say I cannot allow it to be surmised that the meanest or poorest native would not at any period of the existence of this Court obtain a full measure of justice against the Government.[33]

In this way, West identified the King's Court as the sole protector of the Indians oppressed by the Company. This self-fashioning became the ideological basis of the judicial review over the conduct of the government in the 1820s.

However, this did not mean that West was totally in favour of Manockjee. Manockjee explained that the delay in filing the suit was partly due to his having sought redress from the Court of Directors in Britain. He tried to use every means to recover his damages and did not regard the King's Court as the only means of redress. Rather, the structure of dual or multiple powers was essential for his judicial and political manoeuvre, because he could resort to an authority to challenge another. However, the judge said that it was not necessary, 'as this Court was always open to him'.[34] It is hinted here that he did not approve of Manockjee's forum shopping and tried to impress on him that the King's Court was the only supreme tribunal in the presidency. West's conception of the King's Court as the defender of natives was accompanied by his assertion that the King's Court held sovereign status in the presidency.

The second point was that West based his argument on Indian practices and usages, rather than English precedents. The issue was concerned with Manockjee's claim on the interest on unliquidated damages. According to English case law, he was not entitled to the interest, but West articulated that the court of law in India should not be hindered by English precedent, 'especially as a very different practice has prevailed in the Courts of India'.[35] In effect, West advocated a system of Indian common law, distinct from the English one, which was to be formed by the King's Court.

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31 *Oriental Herald*, 3, 1824, 267.

32 Ibid., 269.

33 Ibid., 269–70.

34 Ibid., 270.

35 West even criticised the English practice based on the Indian usage; he said that the distinction between liquidated and unliquidated damages originated more in technical forms of action, rather than difference in principle. Ibid., 268–9.

This attitude was supported by the non-official community in Bombay.[36] The other two aldermen judges, Benjamin Philipps, a surgeon, and William Ashburner, a merchant, decided more favourably than West on the matter of interest.[37] British merchants and lawyers testified in favour of Manockjee. David Malcolm, a member of an agency house, stated that the interest should be compound rather than simple. James Henry Crawford, of one of the large agency houses, also stood as a witness for the plaintiff. John Sandwith, an attorney, even said that although he did not know the cases in which an interest was charged on unliquidated debts, it might have been so.[38]

The government officials expressed several concerns about the judgement. First, the Indians' litigiousness was troublesome. Francis Warden, a member of the governor's council, commented that the Indians were not timid in making lawsuits against the government; on the contrary, they had well understood the value of the King's Court and had fearlessly gone to the court and made suits against the government in the same way as against a private individual.[39] Second, West's award of compound interest was problematic because the same high rate of interest might be awarded in Manockjee's other claims.[40]

But the government was most alarmed by the King's Court's interference in the military operation of the government in a time of war. The government contended that a contract made before war broke out should not be extended to the emergency supplies in a time of war. Manockjee insisted that the terms of contract should be broadly interpreted and the supply in wartime should be included. West supported Manockjee, which meant that the King's Court could review the government's military discretion and order compensation retrospectively. To make matters worse, the judge had an erroneous understanding of the military constitution. Warden explained that, while the three presidencies were totally independent in terms of military command and economy, West misconceived that the Indian army was one and the same and the damages incurred from supply to any army in any presidency should be compensated by the British government in India.[41]

In a move that was designed not only to deny the merchant's claim for interest, but also to maintain the distinction between the civil and the military and to keep its autonomy and discretion in cases of emergency, the government prepared to appeal to the Privy Council,

36 For the radical culture of the presidency towns, see, for Calcutta, P. J. Marshall, 'The Whites of British India 1780–1830: A Failed Colonial Society?', *International History Review*, 12: 1, 1990, 26–44, and, for Bombay, C. A. Bayly, 'Bombay's "Intertwined Modernities" 1780–1880', in *Trans-Colonial Modernities in South Asia*, ed. Michael S. Dodson and Brian A. Hacther, London, 2012, 231–48. Bayly briefly mentioned the Cursetjee Manockjee case in his *Recovering Liberties*. C. A. Bayly, *Recovering Liberties: Indian Thought in the Age of Liberalism and Empire*, Cambridge, 2012, 82–3. But Bayly's argument that the Indian merchant claimed 'right to trade as British subjects' is inadequate as it identified the claim of the London radicals with that of merchant himself, ignoring the discursive function of network.

37 They admitted interest between 1804 and 1815. West only admitted it between 1804 and 1809. *Oriental Herald*, 3, 1824, 269.

38 IOR/L/L/Box 620 (92), Appendix to respondent's case, 21–3.

39 Warden said the same tendency was observed in the *mofussil* as in the presidency. Warden, minute, 17 Apr. 1825, BMC 4 May 1825, v25.

40 Morgan to Gov., 31 Mar .1825, BMC 4 May 1825, v20.

41 Warden, Minute, 14 May 1823, BMC 21 May 1823, 3025–54.

the final court of colonial legal affairs.[42] In the appeal paper, it insisted that the terms of the contract could not be applied to 'an extraordinary and accidental supply of rice' to the Madras army. It also argued that the judgement was 'contrary to the established rules of the law of England respecting the allowance of interest'.[43]

The appeal was granted in the Recorder's Court in June 1823, but the debate in the Privy Council did not start until June 1828. During the interval, Manockjee continued his negotiation with the government. First, Manockjee published an open letter to the governor of Bombay in the *Oriental Herald* to abandon the appeal; he also proposed lowering the rate of interest if the government would not appeal.[44] After these attempts failed and the appeal was lodged, he published an open letter to the Court of Directors in the *Oriental Herald* in December 1826. Manockjee actually demanded more in the letter. He requested that they order the Bombay government to pay the additional five years' interest, which was rejected by the King's Court.[45] This meant that Manockjee was trying to pit the Company against the King's Court to increase the amount of compensation. Manockjee also tried to get support from a director of the EIC, John Morris, a former Bombay civil servant.[46]

Meanwhile, the radicals in London picked up the case as an example of the Company's oppression of the Indians. The main organ of their criticism was the *Oriental Herald*, a monthly journal edited by James Silk Buckingham, a central figure of colonial reformers in this period.[47] It reported West's judgement and Manockjee's open letter, and the editor also published an article titled 'Fraudulent and Disgraceful Transaction of the Bombay Government', in which he linked Manockjee's case with his cause of the freedom of the press in India.[48] In this way, Manockjee's case gradually became famous in London as well as in Bombay. In such a situation, the discussion in the Privy Council was held before Judge John Leach, whig Master of the Rolls.

First, it is important to note that the government's claim of military emergency was rejected by the court. It shows that the Privy Council cannot simply be equated with the government. J. B. Bosanquet, the EIC's standing counsel, emphasised that it was 'an extraordinary demand' made 'in a sudden emergency' outside the contract.[49] But Judge Leach rejected the view, as it was not supported by the evidence submitted to the court.[50] He decided that Manockjee was entitled to full compensation for the principal.[51]

As for the interest, however, the Privy Council reversed the decision of the Recorder's

42 For the role of Privy Council in the colonial jurisprudence, see Peter Anthony Howell, *The Judicial Committee of the Privy Council 1833–1876: Its Origins, Structure and Development*, Cambridge, 1979; Bonny Ibhawoh, *Imperial Justice: Africans in Empire's Court*, Oxford 2013.

43 IOR/L/L/Box 620 (92), Case of the appellant, the first and fifth reasons of appeal, 14–15.

44 *Oriental Herald*, 3, 1824, 270–4; Morgan to Gov, 12 May 1823, BMC 21 May 1823, 3025–54.

45 *Oriental Herald*, 10, 1826, 578–88.

46 Cursetjee to Morris, 26 Jan. 1825, IOR/L/L/Box 620 (92), unbound correspondence, 41–42. This letter was not answered.

47 Bayly, *Recovering Liberties*, chapters 2 and 3.

48 *Oriental Herald*, 3, 1824, 189–200.

49 IOR/L/L/Box 620 (92), Proceedings of Privy Council debates, II, 14 June 1828, 55.

50 Ibid., 57, 63, 81–2.

51 IOR/L/L/7/761, Copy of judgement at the Privy Council by the Master of the Rolls, 21 June 1828, 2–3.

Court. The debate in the chamber was decidedly moralistic on this matter, chiefly due to the speech of Thomas Denman, counsel for Manockjee, who embodied the age of reform in the legal world.[52] He criticised the case for being detrimental to the confidence of Indians towards the British legal system, stating that 'the forbearing creditor' should be compensated by 'the fraudulent debtor', or otherwise it would induce creditors to instantly resort to a legal action without giving their opponents a chance to settle the issue.[53] But Judge Leach was not persuaded. He argued that the interest on the unliquidated damages should not be allowed, because

> if such a usage had prevailed, it is the duty of this court as the court of ultimate Appeal from India, to reform that usage and to declare that without the special authority of the Legislature in this country such a usage if it had prevailed would have been illegal.[54]

This self-proclaimed role as the reformer of Indian legal practice led the Privy Council to reject the Manockjee's argument. Leach was not an enthusiastic reformer in Britain,[55] but his defence of British legal practice resulted in the reform of Indian practice. As historian Ravinder Kumar argues, a conservative in Britain could be a reformer in India.[56] In this sense, he shared the Court of Directors' anxiety over West's judgement, which involved 'a doctrine of such dangerous tendency and so subversive of all the means of check and controul established by the constitution'.[57] As a result of the judgement, compensation for Manockjee was reduced from Rs 5,27,000 to Rs 1,48,000. Manockjee petitioned that the next governor, John Malcolm, reverse the Privy Council's decision, as it was 'given either in total ignorance or direct disregard of the established usage and practice'. However, the government did not listen and decided that he should refund the money to the government in 18 years with annual payments of Rs 25,000.[58]

Despite the failure of realising its claim, the case of Cursetjee Manockjee was important as an initial attempt of Bombay merchants' resorting to the King's Court to challenge the government. It heightened the government's anxiety about the King's Court's interference, especially because they feared that their conduct in wartime would be shackled by the ignorant civil authority's inspection. On a deeper level, this different recognition of the military constitution indicated that the King's Court and the government had different views on British sovereignty in India. West thought that the governments in different presidencies constituted a unitary polity which had sovereignty all over India. Furthermore, the

52 Denman was a whig lawyer, common serjeant of London, who supported the Irish cause, criminal law reform, fight against corruption and abuses, and above all, abolition of the slave trade. He drafted the first reform bill as Attorney General in 1831. Gareth H. Jones, Vivienne Jones, 'Denman, Thomas, first Baron Denman (1779–1854)', *ODNB*.

53 IOR/L/L/Box 620 (92), Proceedings of Privy Council debates, III, 14 Jun 1828, 58–9, 95–7.

54 IOR/L/L/7/761, Copy of judgement at the Privy Council by the Master of the Rolls, 21 June 1828, 4.

55 Michael Lobban, 'Leach, Sir John (1760–1834)', *ODNB*.

56 Ravinder Kumar, *Western India in the Nineteenth Century: A Study in the Social History of Maharashtra*, London, 1968.

57 CoD to Gov, 15 Oct 1828, IOR/L/L/Box 620 (92).

58 Monackjee to Gov, 8 July 1829, and Monackjee to CoD, 23 Aug. 1831, IOR/L/L/7/761.

government of India was identical to the government of England. The territorial sovereignty of the British had already been established in his view. Within that territory, the sovereign justice of the King's Court should be available for all of the King's subjects. On the other hand, the government's understanding of the British constitution in India was pluralist. The Bombay government was distinguished from the governments of Bengal and Madras. This assumption of plurality was related to the officials' view of Indian politics. It was based on the idea that the British government was still essentially a regional power among other Indian chiefs. Their supremacy was still more nominal than real. Justice should be arranged in accordance with the reality, where different chiefs shared sovereignty with the government.[59] This contrast of civil and military visions of Indian politics was more noticeably disputed in the next case between another Bombay merchant and the government.

Refuting the Government's Military Ideology: The Case of Amerchund Bedreechund

The other notable case in which a Bombay merchant/banker sued the EIC and its higher officials was the case of *Amerchund Bedreechund v. Mountstuart Elphinstone, Henry Dundas Robertson and the East India Company*. The process was similar to the Manockjee case: the native merchant petitioned the government to realise his demand; the government rejected it; the merchant resorted to the King's Court; the King's Court decided in favour of the merchant; the government appealed the Privy Council; the Privy Council reversed the decision of the King's Court. The King's Court's interference in the military affairs was also the main issue of dispute. The contrasting visions of Indian society became the focus of debate in the court room, and the government's military conception of society was challenged by the King's Court's civilian perspective.

The case originated in the capture of a Peshwa's treasurer during the Third Maratha War. In 1817, Narroba Outia, the treasurer, was in charge of the fort at Rhygur when it was besieged by British troops. Narroba agreed to the terms of capitulation and surrendered the fort; the treasure was captured by the British army. However, Captain Robertson, the collector, judge and magistrate of Poona, suspected that Narroba hid some of the treasure in his house at Poona. Robertson searched Narroba's house and found a large sum of gold. Robertson seized it as booty of war. Narroba claimed it was his private property, demanded compensation and started to complain about the harsh treatment he received from Robertson. Narroba sent petitions to the Deccan Commissioner, William Chaplin, who made an inquiry in November 1819 and rejected Narroba's claim. Narroba filed a suit in the Recorder's Court in 1822 but died soon afterward and the case was not heard. His trustee, Ameerchund

59 For the sharing of sovereignty, see André Wink, *Land and Sovereignty in India: Agrarian Society and Politics under the Eighteenth-Century Maratha Svarajya*, Cambridge, 1986; Ajay Skaria, *Hybrid Histories: Forests, Frontiers and Wildness in Western India*, Oxford, 1999.

Bedreechund, a Hindu banker and merchant,[60] sued the EIC in the Supreme Court in 1826.[61]

The trial of *Amerchund Bedreechund v. Elphinstone, Robertson and EIC* decided in favour of the plaintiff. Bedreechund employed James Morley, notorious for his anti-government attitude, and another barrister as his counsel. The Company was defended by George Norton, Advocate General, and two other barristers. This meant that five out of the seven barristers in Bombay were involved in the case. The trial was held between the 25th of September and the 14th of November 1826, and the judgement was given on the 28th of November 1826. Morley harangued that the defendants were guilty of exercising illegal authority; Robertson's atrocity was only comparable to the deputies of the French Revolution. He continued that this trial would prove that the Supreme Court had the authority to redress their injustice; hundreds of similar cases were to be applied and thousands of people would come to complain their torts against the Company.[62] Edward West, the chief justice, and Charles Chambers, the puisne judge, endorsed this view and gave a judgement in favour of Bedreechund. The court ordered the defendants to pay Rs 17,50,000, with costs of Rs 16,000.[63]

The judgement was based on three points which highlight the difference between the judges and the government over the law and governance in the newly conquered territories. Firstly, West strongly criticised the Company's oppressive treatment of Naroba, which was, according to him, 'the most important feature of the case'. He detailed Robertson's oppressions and criticised the Deccan Commissioner's examination for also being unreasonably harsh. He concluded that, as the confession of Naroba was obtained 'by means the most illegal and oppressive', it was not proven that the money was the Peshwa's.[64]

Secondly, West argued that the government's seizure of Narroba and his property occurred after the end of the war. Citing Lord Mansfield, West argued that Poona was already in a state of peace because: (1) a proclamation had been issued by Governor Elphinstone, which promised that 'all property, real or personal, will be secure', and (2) the courts of justice had been introduced. Therefore, Narroba had ceased to be an alien enemy when he was captured, and thus he should have been under the protection of the government as a King's subject. West added that the seizure was not based on *jure belli*, since Naroba was under the protection of the conqueror, and rejected the government's claim that the seizure was done *bona fide* as booty.[65]

The judges' third and most important argument was that the King's Court had jurisdiction over the government's military operation. West articulated that the acts of a

60 He dealt with piece goods, joys, jewels and precious stones both in Bombay and Poona. Maharashtra State Archives, High Court Record, Supreme Court equity bundle, 1829, no. 97/82–86.

61 There was another related case in the King's Court, *King v. Bedreechund*, which I do not discuss in this article because the major points of controversy were the same.

62 George Norton, Advocate General, to Gov, 30 Nov. 1826, Bombay Political Consultations [BPC], 6 Dec. 1826, v57.

63 The judgement is printed in the *Oriental Herald*, 14, 1827, 1–40; 2 State Trials, 370–458. Citations below are from the former.

64 *Oriental Herald*, 14, 1827, 12–18.

65 Ibid., 19–21.

government were subject to the jurisdiction of municipal courts. In order to emphasise the tyrannical nature of the claim of the government, he quoted Mansfield's judgement in *Fabrigas v. Mostyn*, which stated that 'to maintain here that every governor, in every place, can act absolutely; that he may spoil, plunder, affect their bodies and their liberty, and is accountable to nobody, is a doctrine not to be maintained'.[66]

Judge Chambers went further to insist that it was not the government but the King's Court that had the power to decide on the state of exception. He admitted that the officers should be allowed latitude of conduct in times of war, but this should not be applied in every case: 'such exceptions, however, when they occur, must be shown to rest upon their proper and distinct grounds, and cannot be presumed to be right unless the particular expediency or necessity is pointed out'.[67] In other words, if the King's Court declared so, any acts of the government in times of war could be amenable to its jurisdiction. These arguments by West and Chambers were important, as they would enable the King's Court to check the government's wartime activities. This assertion of military jurisdiction generated a strong sense of danger among the government officials.

The problem was that, as in the case of Manockjee, the government could not prove the state of war because of the court's rulings of evidence and therefore could not protect their officers from the suit in the King's Court. Advocate General Norton reported that much of the defendant's evidence was unfairly rejected by the court. For example, the correspondence of the government officials and even the government's proclamation in the Deccan were rejected because the originals were not produced. He explained that since it was almost impossible to prove the very existence of war, and thus the rights of war and conquest, all future proceedings of the EIC servants in these emergencies were to be judged by the mere municipal law, rather than as acts of state in *bona fide* execution of the rights of war.[68]

Furthermore, Elphinstone had to worry about a more direct surveillance of the military operation, as Bedreechund demanded the government to produce its confidential papers relating to the war as evidence. Elphinstone cautioned that 'if the records of every department are once placed at the mercy of every attorney who makes an application to the Supreme Court, there can be no secrecy in any affair, foreign and domestic, and no confidence in our own deliberations, or in the persons with whom we have to communicate in any transaction'.[69]

Elphinstone's anxiety was based on his understanding that the Deccan was still in a state of war. He pointed out that the judges had a false view of the state of Poona. It was 'the turbulent capital of a country of which the conquest was still in progress'.[70] Indeed, the Deccan in the 1820s was still in a state of crisis. Highway robberies by the 'hill tribes', such as the Bhils and the Ramusis, were prevalent, and in 1824, as a development of the Burma

66 Ibid., 22–3.
67 Ibid., 30–1.
68 Norton to Gov, 30 Nov. 1826, BPC 6 Dec. 1826, v57.
69 Elphinstone, minute, 19 Sep. 1826, quoted in Thomas Edward Colebrooke, *Life of the Honourable Mountstuart Elphinstone*, London, 1884, ii, 182.
70 Elphinstone, minute, [22 Jan 1827], BPC 14 Feb. 1827, v96.

War, there was a rumour that a brother of the Peshwa would ally with the Pindari (another major hill caste) and rise against the British.[71] In the same year, the British Political Agent was killed in a large scale rebellion in Kittur in the Deccan.[72] In such a situation, the priority of the government in the area was to maintain its tranquillity, and thus the government's military operation should be free from the vigilant eyes of the King's Court.

Elphinstone anticipated a difficult situation in which the government officials would be involved in the future. He vindicated Roberson's conduct in the 'arduous situation at a season between war and peace when he was neither safe from the plots of the enemy nor from the scrutiny of a municipal court—he had not regulations to direct him and is attacked for following the practice of the Marrattas by which alone he could be guided'.[73] In other words, if they could not sufficiently enforce their military control, they would be preyed on by their enemies; but if they were too vigilant and too strict in following the military (Maratha) way of rule, they could be prosecuted in the King's Court. Elphinstone feared this legal anomaly in which the government officials would be left with little scope to achieve the just balance of their military manoeuvre.[74]

The case of Amerchund Bedreechund raised another important concern among the government officials which was not observed in the case of Cursetjee Manockjee: the summons of the *sardars* (Indian aristocrats). Towards these 'real rulers in the country',[75] the government took a general policy of conciliation, as their cooperation was essential for maintaining the order and tranquillity in the localities. The government secured their privileges and exempted them from the EIC's judicial process as in the same way as under the Maratha polity.[76]

In the case of Bedreechund, however, the King's Court summoned the *sardars* and their subordinates to Bombay, including the most powerful of them, Chintaman Rao Patwardhan.[77] If they refused to attend, they might be prosecuted for contempt of court. The government was particularly concerned about the complaints made by the rajas of Satara and Vinchorekur. When the servants of the raja of Satara were summoned, the raja expressed his surprise that it was issued without any previous intimation. The government stated that it would prevent its recurrence and solicited him to send the witnesses to Bombay. The raja did so, but further complained that the judicial business in his court was delayed by it.[78] The raja of Vinchorekur was also told by the agent of Bedreechund that he himself would be summoned. He complained to the government that 'this was a great innovation, and that the chief's dignity would be entirely ruined in the world should he be obliged to appear at the

71 Dirk H. A. Kolff, 'Rumours of the Company's Collapse: The Mood of Dasahra 1824 in the Punjab and Hindustan', in *Mutiny at the Margins: New Perspectives on the Indian Uprising of 1857: Vol. 1, Anticipations and Experiences in the Locality*, ed. Crispin Bates, New Delhi, 2013, 25–42.

72 Edward W. West, *A Memoir of the States of the Southern Maratha Country*, Bombay, 1869, 199–203.

73 Elphinstone, minute, [22 Jan 1827], BPC 14 Feb. 1827, v96.

74 cf. Hussain, *Jurisprudence of Emergency*, 105.

75 Colebrooke, *Elphinstone*, i, 250–1.

76 Kenneth Ballhatchet, *Social Policy and Social Change in Western India 1817–1830*, London, 1957, 210–3.

77 Privy Council Printed Papers, Appendix, TS 11/123.

78 J. Briggs, Resident at Satara, to Gov., 26 and 29 Aug. 1826, BPC 21 Feb. 1827, v77.

bar of the court at Bombay'.[79]

Receiving these reports, Elphinstone expressed his grave sense of danger. He said these proceedings would certainly convince the *sardars* that the Supreme Court could threaten them and the government had no power to prevent it. In consequence, he continued, chiefs would feel considerable uneasiness at the Supreme Court's 'exercise of sovereignty' within their territories and think that the King's Court was equal to the government. He concluded that 'a good deal of the ferment in the Deckan was produced by the general circulation of these summonses'.[80]

Indeed, Elphinstone anticipated that the King's Court's interference would provoke a collapse of the EIC's rule in the *mofussil*. He drafted a despatch to the Court of Directors to obtain an immediate redress.[81] He warned that a false impression was spread in the Deccan that all who were opposed to the government would be supported by the Supreme Court. He predicted that 'great confusion will be produced … [and] it will be necessary for us to keep up a more vigilant control over the Chiefs and to alter our plan of government to one of great strictness in all respects'. Elphinstone referred to an example of the raja of Kolhapur, who was reported to apply to the Supreme Court to set aside his peace treaty with the government.[82] Elphinstone further cautioned that the Indians even believed the alteration of the government from the EIC to the Supreme Court at the expiration of the charter in 1834.[83] These comments illustrate the location of the sense of crisis caused by the King's Court in the *mofussil*: it would unleash the disloyal rallying of the independent chiefs and *sardars* around the King's Court to challenge the government.

So the government appealed to the Privy Council.[84] Bedreechund had died soon after the judgement of the Supreme Court, and now his cause was succeeded by his trustees, Heerachund Bedreechund and Jetmul Anoopchund. They employed reformist lawyers in Britain in the same way as Cursetjee Manockjee did. Their agent in London was John Hopton Forbes, solicitor and a relation of radical MP Charles Forbes. John Williams, KC, a staunch whig who was elected as an MP several times, and Thomas Denman, the counsel for Cursetjee Manockjee, spoke for Bedreechund and Anoopchund in the court.[85] The judge was Lord Tenderden, high tory Lord Chief Justice. The government asserted that the King's Court, as the municipal court, did not have jurisdiction over the military conduct of the government and that their evidence was unfairly rejected. The Bedreechund side reiterated that the property was Narroba's and that the seizure was civilly illegal as it was done in peacetime, not war.[86] The trial was held on the 3rd and the 19th of June, and the judgement

79 Eventually the raja was not summoned. W. H. Wathen, Persian Secretary, to Gov, 24 Aug. and 1 Sep. 1826, BPC 21 Feb 1827, v77.

80 Elphinstone, minute, 23 Jan. 1827, BPC 21 Feb. 1827, v77.

81 Elphinstone, minute, 30 Nov. 1826, BPC 6 Dec. 1826, v58.

82 Kolhapur was an independent chief in the Deccan. The raja repeatedly exhibited his territorial ambition towards the neighbouring state of Satara, which eventually induced the military intervention of the British.

83 Elphinstone, minute, 1 Dec. 1826, BPC 6 Dec. 1826, v60.

84 2 State Trial, 410–450; 1 Knapp, 316–61.

85 IORL/L/Box 54 (386).

86 The National Archives [TNA], TS 11/123; 2 State Trial, 409–10

was given on the 14th of July 1830. The Privy Council overturned the decision in Bombay.

It seems that party politics influenced the decision of the case. The course of debate was determined by the intervention of Attorney General James Scarlett, newly converted tory lawyer/politician and protégé of Wellington, whose influence over Tenterden was notorious.[87] He made a long speech in favour of the EIC.[88] Accordingly, Lord Tenterden judged in favour of the Bombay government, saying that the seizure was a hostile seizure and that a municipal court had no jurisdiction on the subject.[89] Bedreechund and Anoopchund did not abandon their cause there. They connected the Bedreechund case with a larger political controversy over the distribution of the Deccan Prize Money.[90] A month after the judgement, they petitioned the trustees of the Deccan booty, the Duke of Wellington and Charles Arbuthnot, which eventually led to another meeting at the Privy Council.[91] However, Tenterden again rejected their argument.[92] Wellington's influence was not small. He demanded the full attendance of the councillors at the meeting,[93] and this time his protégé Scarlett was the counsel for the Bombay government.

In their campaign in London, the Indian merchants collaborated with the radicals. The case was reported in the *Oriental Herald* with comments by Buckingham. He argued that it exemplified the deficiency and corruption of the Company's judicial system in the *mofussil* run under 'despotic violence'.[94] The radicals also used the case to criticise the corruption of the Privy Council itself.[95] It was also alleged that Joseph Hume ordered Bedreechund and Anoopchund to write a petition in order to use it in the Commons debate.[96] The radicals emphasised Narroba's personal calamities and deprivation of his private property and, by doing so, pointed out the need for reform of the Privy Council.[97] The linkage strategy with the Deccan Prize Money case might be proposed by the radicals, who had used it to criticise the government before.[98] In this way, the Bedreechund case was used to vindicate judicial reforms both at home and in the colony. This did not necessarily mean that the Bombay merchants identified themselves with the causes of radicals, but it certainly meant that the Bombay merchants had a specific interest in radicalism in Britain, as it could increase their means to challenge the government. Nonetheless, the fact remained that, in India, the government could seize private property without compensation in cases of emergency, unrestrained by the judiciary.

87 G. F. R. Barker, 'Scarlett, James, first Baron Abinger (1769–1844)', rev. Elisabeth A. Cawthon, *ODNB*.
88 2 State Trials, 434–49.
89 Ibid., 449–50.
90 For the Deccan Prize Money case, see Alfred Kinloch, *Abridgment of the Report of the Proceedings in the Case of the Deccan Prize Money, with Supplementary Papers, etc.*, London 1864.
91 Lawford to Melville, 10 Aug. 1830, IOR/L/L Box 54 (386).
92 2 State Trial, 450–8.
93 Kirkland to Maule, 10 July 1831, TNA TS 11/122.
94 *Oriental Herald*, 14, 1827, 7–11.
95 This was the period in which Whig Henry Brougham attempted its reform. Howell, *The Judicial Committee*, 16–7.
96 Lawford to Melvill, private and confidential, 19 Jan. 1831, IOR/L/L Box 54 (386).
97 HC Deb., 6 August 1832, vol. 14, cc. 1136–56; HC Deb., 10 August 1832, vol. 14, cc. 1322–5.
98 HC Deb., 28 June 1825, vol. 13, c. 1408; HC Deb., 1 July 1825, vol. 13, cc. 1466–72.

Conclusion

This article has pointed out that the Indian merchants' demand for compensation for damages incurred in times of war resulted in the general debate on the character of British governance in India. The problem was that, in the midst of 1820s crisis, the government's militarist logic of emergency was denied by the judges' civilian claim of the rule of law. The officials feared that the King's Court's rulings would hinder its conduct of war in the future and disturb the tranquillity of the newly conquered territories. In the end, the government's insistence of state necessity was sanctioned in the appeal cases, and the judges' alternative vision of colonial governance was rejected.

These cases illustrate some features of the networks and power involved in imperial judicial politics. The Bombay merchants actively relied on the imperial network of lawyers and radicals. In Bombay, those lawyers who had an anti-establishment inclination such as Attorney Ayrton or Barrister Morley were essential for their challenge to the government. They were the source of legal knowledge and techniques and acted as agents inside and outside the court. In London, radical MPs such as Hume, Buckingham and Forbes and reformist lawyers such as Denman enabled them to access metropolitan journalists, lawyers and politicians. The network also determined discourse. Especially when the stage was moved to Britain after the government's appeal, the contest was put in the metropolitan ideological and discursive constellation which was distinct from India. It enabled the Indian merchants to gain support from the radicals, but they were, in the end, defeated by the conquest ideology of the tories embodied in the solid institutional structure of appeal in the empire.[99]

In conclusion, I suggest that the Indian agency which generated the government's sense of crisis was the driving force of the transformation of political structure in the long run. These cases of Bombay merchants were part of a larger story of conflict between the government and the King's Court in Bombay in the 1820s. First, the King's Court criticised the government's encroachment of the autonomy of Bombay city, which was governed by powerful British merchants.[100] Second, the collection of revenue in the *mofussil* was hindered by the revenue defaulters' use of the King's Court to overturn the decree of the Company's Court. Third, the King's Court's summonses were repeatedly issued to the *sardars*, and, to make matters worse, the *sardars* and independent princes themselves started to resort to the authority of the King's Court to challenge the government. The sense of crisis culminated in the two cases of habeas corpus in 1828, in which the government directly interfered in the process of the King's Court. As a result of these conflicts, the government officials both in India and in Britain realised the need to make a unitary and hierarchical

99 Jon Wilson, 'The Silence of Empire: Imperialism and India', in *Languages of Politics in Nineteenth-Century Britain*, ed. David Craig and James Thompson, Basingstoke, 2013, 218–41.

100 On this issue, see Haruki Inagaki, 'Policing the Market: Metropolitan Ideas and Local Contexts in Police Reform in Early Nineteenth-Century Bombay City', in *Moving Around: People, Things and Practices in Consumer Culture*, ed. H. Shin, S. Majima and Y. Tanaka, Tokyo, 2015, 171–6.

structure of administration. The charter renewal in 1834 embodied this aspiration, which subordinated the King's Court to the governor-general's legislative council.[101] In other words, the indigenous practices within eighteenth-century legal pluralism generated a new, sovereign legal system in India in the nineteenth century. A global transition from hybrid to sovereign legal regimes needs further comparative studies.[102] Britain should also be included in such comparisons because, as Julian Hoppit's recent argument on the vulnerability of property suggests, it also shared many 'colonial' elements of politics.[103]

101 These developments are fully discussed in my Ph.D thesis in progress. Haruki Inagaki, 'The Rule of Law and Emergency in Colonial India: The Conflict between the King's Court and the Government in Bombay in the 1820s', London Univ. Ph.D thesis forthcoming.

102 Benton, *Law and Colonial Cultures*; Benton, *Search for Sovereignty*; Ford, *Settler Sovereignty*; Hamal Foster, Benjamin L. Berger and A. R. Buck, eds., *Grand Experiment: Law and Legal Culture in British Settler Colonies*, Vancouver, 2008; Shaunnagh Dorset and Ian Hunter, eds., *Law and Politics in British Colonial Thought: Transpositions of Empire*, Basingstoke, 2010; Mark Hickford, *Lords of the Land: Indigenous Property Rights and the Jurisprudence of Empire*, Oxford, 2011; Saliha Belmessous, *Native Claims: Indigenous Law against Empire 1500–1920*, Oxford, 2012; Shaunnagh Dorsett and John McLaren, eds., *Legal Histories of Empire: Laws, Engagements and Legacies,* Abington, 2014.

103 Julian Hoppit, 'Compulsion, Compensation and Property Rights in Britain 1688–1833', *Past and Present,* 210, 2011, 93–128. Cf. Mariam Dossal, *Theatre of Conflict, City of Hope: Mumbai 1660 to Present Times*, New Delhi, 2010, chapter 5: 'Law and the Acquisition of Land for Public Purpose c. 1830–60'; Debjani Bhattacharyya, 'History of Eminent Domain in Colonial Thought and Legal Practice', *Economic and Political Weekly,* L/50, 2015, 45–53. See also, Daniel Skinner and Leonard Feldman, 'Eminent Domain and the Rhetorical Construction of Sovereign Necessity', *Law, Culture and Humanities,* 11: 3, 2015, 393–413.

Public Interest in the Debates on Britain's Electric Telegraphs Bill of 1868

Kyoko Matsunami*

Abstract. This article explores the enactment process of the Electric Telegraphs Act of 1868. Private telegraph companies paved the way in the development of the telegraph business after investing in the system in Britain. It differed from other countries where the government led the development of the business. The British government managed the telegraph business as a division of the postal service after nationalisation. It should, however, be noted that the British Parliament – with almost no confrontation between the Conservative and the Liberal Parties – approved this compulsory nationalisation under a laissez-faire national policy. In the background, the general public supported nationalisation with the government managing the business. Only the telegraphic communication companies and railway companies were opposed. This paper attempts to clarify the details of the enactment process of the Bill, and analyse the circumstances surrounding Parliament's acceptance of a monopoly for electric telegraph services.

Introduction

This study examines the nationalisation of the electric telegraph business in late 19th century Britain, focusing specifically on legislative procedures pertaining to the Electric Telegraphs Act of 1868 (henceforth, 'the Act')[1] and related debates. This nationalisation was the first case in Britain of establishing a national monopoly through forced acquisition,[2] not for military reasons but carried out in order to protect the public interest in the telegraphic business. The purpose of this study is to elucidate why the government of Victorian Britain, which was based on the laissez-faire capitalism,[3] approved this

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1 The formal subtitle of the bill was 'to enable the Postmaster-General to acquire, maintain and work the Electric Telegraph in the United Kingdom'.

2 Charles Richard Kieve, *The Victorian Post Office: The Growth of a Bureaucracy*, Woodbridge and Rochester, NY: Boydell & Brewer, 1992; id., 'Frank Ives Scudamore and the Post Office Telegraphs', *Albion*, Vol. 12, No. 4, 1980, 350-367; James Forman-Peck and Robert Millward, *Public and Private Ownership of British Industry 1820-1990,* Oxford and New York: Oxford University Press, 1994; Ira J. Cohen, 'Toward a Theory of State Intervention: The Nationalization of the British Telegraphs', *Social Science History*, Vol. 4, No. 2, 1980, 155-205; Toyama Yoshihiro, *Igirisu Sangyo Kokuyuka-ron* [*British industrial nationalisation*], Kyoto: Minerva Shobo, 1973. Tooyama said 'probably, it is the beginning of use of the term "nationalise"' (Leonard J. Tivey, *Nationalization in British Industry*, London: Jonathan Cape, revised edition, 1973, Japanese translated by Toyama Yoshihiro, *Igirisu Sangyo no Kokuyuka*, Kyoto: Minerva Shobo, 1980, 78).

3 See Peter Mandler ed., *Liberty and Authority in Victorian Britain*, Oxford: Oxford University Press, 2006; Martin J. Daunton, *State and Market in Victorian Britain: War, Welfare and Capitalism,* Woodbridge: Boydell Press, 2008; Okada Tomoyoshi, 'Jiyu-hounin-shugi to Shakai Kaikaku: 19 Seiki Gyosei Kaikaku Ronso ni yosete' [Laissez-faire and the Social Reform], *Shakai Kagaku Kenkyu*, Vol. 27, No. 4, 1976, 1-37; Tanaka Masaharu, *Jiyu-shugi Keizai Shiso no Hikaku Kenkyu* [*The Comparative Study of Liberal Economic Thoughts*], Nagoya: Nagoya University Press,

nationalisation.

As a result, the 'publicness'[4] of the electric telegraph business played a crucial role in establishing the modern information infrastructures that facilitated the dawn of the information society in Britain.

In previous studies on telegraphic communication in Britain, the focal point of research was how international telegraphic communication, as an international public good, used submarine cables.[5] Approaches from the viewpoint of modern world-system theory or global history theory did not appear until after the 1980s. Although P. K. O'Brien did not touch upon telegraphic communication, the information distribution of telegraphic communication was important in the establishment of these international public goods. This opinion was embraced by Akita.[6] D. R. Headrick examined the science and technologies that supported the British Empire;[7] these works showed that the electric telegraph communication network became an 'invisible weapon' of the British Empire. B. Marsden highlighted the influence of innovations in transportation and communication technology in the British Empire,[8] while B. Finn and D. Yang considered the management cables.[9] These studies demonstrated that submarine cables constituted one of the important tools of the British Empire.[10]

As will be discussed, electric telegraph communication was recognized in the deliberations of the Act, not as an international public good but as a public good for public interests. A number of studies on public utilities policy have touched upon this point. L. J. Tivey and Sasaki considered the public duty with regards to the electric telegraph business.[11] However, these studies treated the public duty as an early stage of social democratic reform. Moreover, C. R. Perry emphasized that the General Post Office, which took the lead throughout the 19th century in expanding bureaucracy, was involved in the enactment of the Bill.[12]

1997.

4 Ohno Makoto ed., *Kindai Igirisu to Kokyo-ken* [*Modern Britain and the Public Sphere*], Kyoto: Showado, 2009.

5 Patrick K. O'Brien (Shigeru Akita and Tamaki Toshiaki eds.), *Teikoku-shugi to Kogyoka 1415-1974*, Kyoto: Minerva Shobo, 2000 (this book collected the papers of P. K. O'Brien's and is translated to Japanese).

6 Akita Shigeru, *Igirisu Teikoku to Ajia Kokusai Chitsujo* [*British Empire and International Order in Asia*], Nagoya: Nagoya University Press, 2003.

7 Daniel R. Headrick, *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century*, Oxford University Press, 1981; Id., *The Invisible Weapon: Telecommunications and International Politics 1851-1945*, Oxford and New York: Oxford University Press, 1991.

8 Ben Marsden and Crosbie Smith, *Engineering Empires: A Culture History of Technology in Nineteenth-Century Britain*, Basingstoke: Palgrave Macmillan, 2005.

9 Bernard Finn, and Daqing Yang ed., *Communications under the Seas: The Evolving Cable Network and its Implications*, Cambridge, MS and London: MIT Press, 2009.

10 Bruce J. Hunt, 'Doing Science in a Global Empire: Cable Telegraphy and Electric Physics in Victorian Britain', in *Victorian Science in Context*, ed. Bernard Lightman, Chicago: University of Chicago Press, 1997, 312-333; Harold A. Innis, *Empire and Communications*, Foreword by Andrew Calabrese, Introduction by Alexander John Watson, Plymouth: Rowman & Littlefield Publishers Inc., 2007; Tom Standage, *Victorian Internet: The Remarkable Story of the Telegraph and the Nineteenth Century's On-Line Pioneers*, New York: Walker & Co., 1998.

11 Tivey, *Nationalization in British Industry*; Sasaki Hiroshi, *Igirisu Kokigyo-ron no Keifu* [*The Genealogical Study of Public Enterprises in Britain*], Tokyo: Chukura-shobo, 1973.

12 Perry, *The Victorian Post Office*; id., 'The Rise and Fall of Government Telegraphy in Britain', *Business and Economic History*, Vol. 26, No.2, 1997, 416-425. See also, Richard B. Du. Boff, 'The Rise of Communications Regulation: The Telegraph Industry, 1844-1880', *Journal of Communication*, Vo. 34, No. 3, 1984, 52-66; Douglas C.

However, this law represented the first time companies were purchased on a national scale with the approval of British Parliament in the mid-19th century – a period when Britain was known as a liberal state. Parliament realized that a national monopoly on electric telegraph services was indispensable to the diffusion of telegraphic communication as a public good. In spite of strong opposition from private corporations, the nationalisation of electric telegraph services was eventually established. Political and military factors played no role in the arguments related to the Bill. The focal point of debates concerning the Bill was who could manage electric communications efficiently in safe and convenient ways for the benefit of the people. In other words, the British Parliament prioritized public interest by the State over the principle of the laissez-faire.

This paper examines the historical records of British Parliamentary Debates,[13] as well as pamphlets published concerning the nationalisation of electric telegraph services. Those who participated in the debates were Members of Parliament, merchants (particularly from the Chambers of Commerce of Edinburgh, Liverpool, and Manchester), representatives of various electric telegraph and railway companies, an economist (William Stanley Jevons), scientists, and electrical engineers. William Ewart Gladstone, the leader of the Liberal Party, asked Frank Ives Scudamore, the Assistant Secretary of the Post Office, to draft the original Bill. The government, the Treasury, the General Post Office, various Chambers of Commerce nationwide, the Press Association, economists such as Jevons, scientists, and engineers all approved the contents of this Bill. The Conservative and the Liberal Parties were also supporting this nationalization. Only the telegraph and the railway companies remained opposed to it.

Pitt, *The Telecommunications Function in the British Post Office: A Case Study of Bureaucratic Adaptation*, Farnborough: Saaxon House, 1980; Robert Millward, *Private and Public Enterprise in Europe: Energy, Telecommunications and Transport, 1830-1990,* Cambridge: Cambridge University Press, 2005; Tomas Nonnenmacher, 'State Promotion and Regulation of the Telegraph Industry', *Journal of Economic History*, Vol. 61, No. 1, 2001, 19-36.

13 [HCPP] Bill to enable Postmaster General to acquire, work and maintain Electric Telegraphs, 1867-68 (82) II.339 [as amended by Select Committee] 1867-1868 (239) II.339; Select Committee on Electric Telegraphs Bill Special Report, Proceedings, Minutes of Evidence, Appendix, Index 1867-68 (435)(435-I) XI. 1,333: [Hansards] Parliament－Arrangement of Business, HC Deb 26 March 1868, vol. 191, cc263-4; Electric Telegraphs Bill, Leave, First reading, HC Deb 1 April 1868, vol. 191, cc678-82; Electric Telegraphs Bill, Question, HC Deb 2 April 1868, vol. 191, c706, Electric Telegraphs Bill, Question, HC Deb 21 May 1868, vol. 192, c654; Dissolution of Parliament, Question, HC Deb 29 May 1868, vol. 192, cc1053-76, Electric Telegraphs Bill, Question, HC Deb 8 June 1868, vol. 192, c1231; Electric Telegraphs Bill, [BILL 82.] Second Reading, HC Deb 9 June 1868, vol. 192, cc1301-33; The Post Office Service, Question, HC Deb 12 June 1868, vol. 192, c1476; Electric Telegraphs Bill, Question, HC Deb 16 June 1868, vol. 192, c1631; Electric Telegraphs Bill, [BILL 82.] Second Reading --Adjourned Debate, HC Deb 18 June 1868, vol. 192, cc1805-9; Electric Telegraphs Bill, [BILL 82] Select Committee Nominated, HC Deb 23 June 1868, vol. 192, cc1978-80; Electric Telegraphs Bill, Question, HC Deb 6 July 1868, vol. 193, c720; Electric Telegraphs (re-committed) Bill, [BILL 239.] Committee, HC Deb 21 July 1868, vol. 193, cc1557-604; Electric Telegraphs Bill, Consideration, HC Deb 22 July 1868, vol. 193 c1651; Electric Telegraphs Bill, [BILL 239.] Consideration, HC Deb 22 July 1868, vol. 193, c1651; The Post Office and Circular Delivery Companies.－Question, HC Deb 29 July 1868, vol. 193, c1922; Electric Telegraphs Bill (No. 282), Second Radins, HL Deb 24 July 1868, vol. 193, cc1692-701; Electric Telegraphs Bill (No. 282), Committee, HL Deb 27 July 1868, vol. 193, cc1813-4; Electric Telegraphs Bill (No. 282), Third Reading, HL Deb 28 July 1868, vol. 193, c1895: [Contemporary Pamphlets] Thomas Allan, *Allan's System of National Telegraphic Communication*, London 1859; *Government and the Telegraphs: Statement of the Case of the Electric and International Telegraph Company against the Government Bill for Acquiring the Telegraphs*, London: Effingham Wilson, 1868.

The general public supported and promoted the enactment of the Bill. Various parties were engaged in the process. Their statements were published in the form of pamphlets, newspaper articles, and petitions to Parliament. The nationalisation of electric telegraph services was promoted as a result of actions by those who demanded reasonable, efficient, and convenient telegraph networks. The focus of the debates was who should run the business, namely, the British government or British private companies.

Our first purpose is to clarify the enactment process of the Bill as a forced-acquisition in modern Britain. This issue was not discussed in detail by J. L. Kieve or C. R. Perry.[14] The second purpose is to analyse the circumstances surrounding Parliament's acceptance of a monopoly for electric telegraph services. The paper will conclude that Parliament accepted a government monopoly and approved the Bill to realize and promote the public interest.

The framework of the agreement reached in the debates was as follows. Firstly, electric telegraph services were nationalised not for the benefit of the state, but for the benefit of the public. Secondly, the duty of the state was to serve the public interest. Here, 'public interest' refers to the interests of the public and the country, not those of the state and the government. The government worked through the Post Office system to promote the public interests vis-à-vis electric telegraph services.

1. The Circumstances Surrounding the Enactment of the Electric Telegraphs Bill

This section describes the enactment process of the Bill. It then provides a discussion on the social interests of the supporters and opponents of the Bill.

1.1. The Enactment of the Electric Telegraphs Bill

According to Parliamentary records, deliberations on the Bill advanced in Parliament as follows. The first reading of the Bill was held in the House of Commons on 1 April 1868. The Chancellor of the Exchequer explained the details of the Bill, and there was no strong opposition to it. The Bill was then sent for its second reading. The electric telegraph companies and railway companies that had feared a national purchase of their businesses in the past stood in opposition. To explain its opposition to the Bill, the Electric and International Telegraph Company published *Government and the Telegraphs: Statement of the Case of the Electric and International Telegraph Company against the Government Bill for Acquiring the Telegraphs.*

The second reading in the House of Commons occurred on 9 June. George Leeman, a Member of Parliament from the Liberal Party, expressed his strong opposition; however, Gladstone, the leader of the Liberal Party, did not express an opposite opinion. On the

14 Jeffrey L. Kieve, *The Electric Telegraph: A Social and Economic History*, Newton Abbot: David and Charles, 1973; Perry, 'The Rise and Fall of Government Telegraphy in Britain'.

second reading, which was on 12 April, the House of Commons determined that it would convene a Select Committee for the Bill that would deliberate on the text of the Bill and the conditions of a forced-acquisition purchase *inter alia*; this action was demanded by opponents such as Leeman and George Joachim Goschen. The House of Commons nominated the Committee members and on 23 June, defined the primary points of the argument. The Select Committee convened from 1 to 16 July.

The Committee consisted of 11 members. The Chairman was George Ward Hunt of the Chancellor of the Exchequer. There were also five members selected from the Conservative Party and another five members from the Liberal Party. The third of these groups included Goschen, the Director of the Bank of England and Leeman, a lawyer and railwayman. Although the Committee examined the Bill's text, no Committee members other than Goschen and Leeman voiced any opposition, and the content of the Bill remained materially unchanged. In July 1868, the House of Commons was presented with the corrected Bill that arose from the Committee's deliberations.

This amended Bill was approved in Parliament and subsequently enacted. Another Select Committee was called after that time, in 1869, and an additional Bill was approved.

It was the Select Committee for the Act that argued in detail about the propriety of a government monopoly in the electric telegraph business and the implications thereof. It should be noted that the people who were supporting the Liberal Party announced support for the Bill—for instance, John Edward Taylor, a manager at the *Manchester Guardian* and George Harrison, Chairman of the Edinburgh Chamber of Commerce and a future Member of Parliament from the Liberal Party.

1.2. Social Interests around the Bill

There were several social interests surrounding the Bill in terms of supporters and opponents. The supporters included the general public, financial and industrial communities, journalists, scientists, engineers, and bureaucrats. The opponents included electric telegraph companies and railway companies. We will examine each of these two groups and show how opponents of the Bill found themselves in isolation. We will also provide the social context in which this Bill came to be enacted.

SUPPORTERS: 1) THE PUBLIC

Prior to the enforcement of the Act, the telegram rate in Britain was so expensive that it was generally not useful for correspondence, except in cases of emergency. According to the arguments in the Select Committee report and the debates in the House of Commons, dissatisfaction with the high telegram rate grew as the telegraph communication network diffused and telecommunication itself became familiar to the populace. As the importance of Parliament as an organization that reflected public opinion was increasing, especially after the Second Reform Act in 1867, and as both the Conservative and the Liberal Parties were scrambling to achieve political power, the government was not able to ignore public opinion.

SUPPORTERS: 2) THE FINANCIAL AND INDUSTRIAL COMMUNITIES AND THE MEDIA

In 1856, the Liverpool Chamber of Commerce petitioned the House of Commons to introduce a uniform telegram rate not exceeding 20 pence, and for the establishment of numerous telegraph offices.[15] Public requests to nationalise the electric telegraph business gradually increased in volume, and a reduction in the telegram rate from electric telegraph companies became an important issue (see Section Supporters: 3) below). Various newspapers came together to form the Press Association and after 1865, that organization voiced dissatisfaction with the expensive rate, issues regarding late delivery, and inaccurate telegram transmissions in Manchester. In the same year, the Edinburgh Chamber of Commerce established a committee that petitioned the government to construct a telegraph transmission system that would charge low rates, make fewer mistakes, and create fewer distribution delays, especially with journalists' telegrams. In October 1865, this petition was forwarded to Chambers of Commerce nationwide.[16]

SUPPORTERS: 3) SCIENTISTS AND ENGINEERS

In 1854, Thomas Allan, an electric telegraph engineer, suggested that an electric telegraph communication system be managed by the government, wherein a telegram rate of 1 shilling per 20 words would be charged, regardless of delivery distance. He insisted that the government could manage the system at such a rate by virtue of the economy of scale.[17]

Jevons was a member of the Manchester Statistics Association from 1865 to 1866 and was achieving fame as a figure in the field of applied economics. In April 1867, he published an article entitled 'On the Analogy between the Post Office, Telegraph, and Other Systems of Conveyance of the United Kingdom, and as Regards Government Control'[18] in support of the Bill.

SUPPORTERS: 4) MEMBERS OF PARLIAMENT AND BUREAUCRATS

In 1860, Allan's proposal was again suggested to Lord Stanley, the Postmaster-General, and to John Lewis Ricardo, a nephew of David Ricardo who was the most important economist at the time.[19] In the following year, J. L. Ricardo showed the proposal to Gladstone, the Chancellor of the Exchequer under the Liberal Party government. Gladstone sent it to Alexander Spearman, the Comptroller General of the National Debt, and to Scudamore, the Assistant Secretary of the Post Office. (Scudamore had already achieved success in the establishment of the savings bank system).[20] However, a draft of the Bill had

15 Suzuki Toshio, '19 Seiki no 'Tsushin Kakumei' to Toshi [The Communication Revolution and the City in the Nineteenth Century]', in *Igirisu Toshi-shi Kenkyu: Toshi to Chiiki*, eds. Igiirisu Toshi-shi Nouson Kyodo-tai Kenky-kai and Tohoku Daigaku Keizai-shi Keiei-shi Kenky-kai, Tokyo: Nihon Keizai Hyoron-sha, 2004, 121-144, 133.

16 Kieve, *The Electric Telegraph*, 125-128.

17 Special Committees: Thomas Alan, 7 July; Kieve, *The Electric Telegraph*, 119-120.

18 William Stanley Jevons, *Methods of Social Reform and Other Papers*, London: Macmillan, 1883 (2011 Reprinted by South Carolina: Biblio Bazaar)

19 Special Committees: Scudamore, 1 July; Kieve, *The Electric Telegraph*, 120.

20 *Ibid*., 121.

not been definitively crafted.

Then, a petition from the Edinburgh Chamber of Commerce strongly urged the drafting of a Bill. In July 1866, Lord Montrose, the new Postmaster-General and a member of the Conservative Party, directly received the petition from the Edinburgh Chamber of Commerce. Montrose requested that the Lords' Commissioners of Her Majesty's Treasury consider the nationalisation of electric telegraph companies. Subsequently, a draft of the Bill was crafted by Scudamore and submitted in 1878 to the House of Commons under the Conservative Party government, which had held office since 1867.

C. R. Perry emphasizes that the General Post Office, which took the lead in the expansion of government bureaucracy throughout the 19th century, was a key institution in the context in which this Bill was enacted.[21] Although Scudamore had a sense of rivalry toward Rowland Hill, who established the penny post system, and his desire for improvements led him to 'take some reckless actions', Perry indicates that the Bill was enacted as a result of the actions of bureaucrats who wanted to extend the national role, power, and interests of the General Post Office, rather than on account of Scudamore's personal circumstances.

When the Bill was enacted in Parliament, there was nonpartisan agreement between the Conservative and the Liberal Parties, and the roles of Scudamore and other bureaucrats in the nationalisation process were not noticeable.

OPPONENTS: ELECTRIC TELEGRAPH COMPANIES AND RAILWAY COMPANIES

British electric telegraph companies started to revise their domestic telegram rate in 1865, in the face of public opinion calling for the nationalisation of the electric telegraph business. They set up the following rates for telegrams within London or between London and other large cities: (1) a telegram addressed to a London address would cost 6 pence for 20 or fewer words; and (2) a telegram addressed to the outskirts of London and contained 20 or fewer words would cost 1 shilling for a distance of 100 miles, 1 shilling 6 pence for a distance of 100–200 miles, and 2 shillings for a distance of 200–300 miles. Although this change was in response to a perceived 'takeover' by the government, it was also an attempt to ease severe competition among private corporations.[22] The railway companies were also opposed to this nationalisation. They were especially apprehensive regarding wayleaves related to purchases.

Under the aforementioned circumstances, the intention of nationalising the electric telegraph business through the Postmaster-General was announced officially in the *London Gazette* in November 1867. However, the Bill was rejected in Parliament due to confusion stemming from the Second Reform Act. This Bill was finally approved in April 1868, and the management of the telegraph communication system was transferred to a government monopoly on 28 January 1870. At that point, domestic telegraphic communication was

21 Perry, *The Victorian Post Office*; id., 'The Rise and Fall of Government Telegraphy in Britain'.

22 Kieve, *The Electric Telegraph*, 67.

available at the uniform rate of 1 shilling.

Britain joined the Universal Postal Union in 1871. Because the membership in the union was contingent on the management of telegraphic communication by the public, Britain had not previously been able to join. When the Bill was enacted in 1868, however, Britain satisfied this membership criterion, and there was a subsequent reduction in the international telegram rate.

From the examination of the social interests in play when the Bill was enacted, it is clear that the supporters were the merchants (who were the actual users of the telegram service), the press, and scholars. The opponents were the electric telegraph companies and railway companies who profited from the status quo of the telegraph system. Opponents of the Bill found themselves in isolation. These conditions remained through a change in government from the Liberal to the Conservative Party.

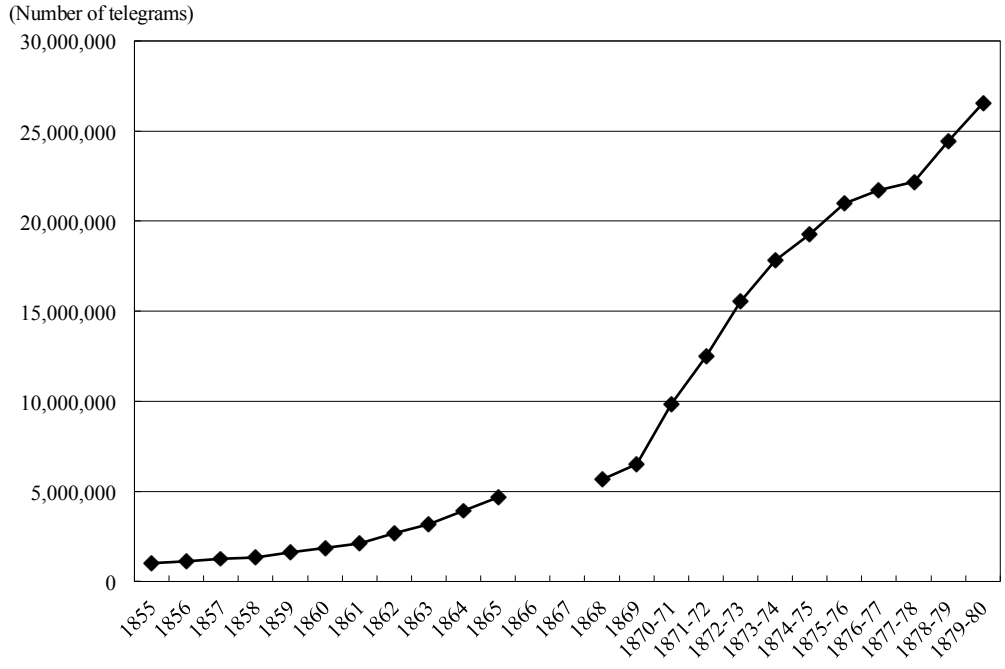

Figure. 1. Number of domestic telegrams delivered in Britain (1855–1880)

Sources: 1855-65: Copy of 'Reports to the Postmaster General by Mr Scudamore upon the Proposal for Transferring to the Post Office the Control and Management of the Electric Telegraphs throughout the United Kingdom' [1867-68, 202], BPP, 18 April. 1868 (only an estimate is shown for this year); 1869: 'Special Report from the Select Committee on Electric Telegraphs Bill: Together with the Minutes of Evidence, Appendix, and Index' [1867-68, 435], BPP, 16 July 1868; 1870-80: 'Forty-First Report of the Postmaster General on the Post Office, Appendix' [1895, C. 7852], BPP, 1895, Appendix H.

2. Discourse Analysis of the Parliamentary Debate on the Electric Telegraphs Bill

2.1. Analysis of Statements of the Debates on the Bill

The British government was compelled to consider public opinion in the period during which the contents of the Bill were being discussed, because the second electoral reform had already been introduced. This reform increased the number of voters and thus forced Parliament to reflect the popular interests and opinions of the people much more than in previous times. Every national issue at the time had been brought to Westminster, discussed, decided, and its outcome made public in the form of newspaper articles the following day. Naturally, information and materials indispensable to these discussions had been supplied to the participants of these Parliamentary sessions and various committees.

In the background of the Parliamentary debates on the Bill, public opinion had been in favour of the nationalisation up until (and including) the time during which the Bill was being proposed to Parliament. Articles and letters in favour of the Bill appeared in the newspapers and petitions were made by various Chambers of Commerce nationwide. Jevons, a famous economist, declared his approval of nationalisation before the Parliamentary session. It is very likely that these voices, especially within the context of government reform, forced Members of Parliament to accept and approve the Bill.

Of course, the principle of the freedom of entry[23] was embraced by the majority of these voices. During the Bill's second reading, Leeman, a member of the Liberal Party and an opponent of the Bill, criticized the idea of a state monopoly on telegraph services on the grounds of economic liberalism. He also warned against the danger of private information written in the telegrams being leaked by national enterprises during the transmission.

> A Royal Commission had recently inquired into the policy of the Government becoming possessed of the railways. Witnesses were examined before the Commission, and Mr. Edwin Chadwick and others had given evidence in favour of such a proposal. The Railway Commissioners, however, in their Report, pointed out that the railway system had originated in the enterprize of individuals, and that private enterprize had led to a much more rapid development of railways than any other system could have done. The conclusion at which the Commissioners arrived was that on the various grounds mentioned by them they could not concur in the purchase of railways by the State, and that it was more expedient to leave the construction and maintenance of railways, under certain conditions to be imposed by Parliament, to the free enterprize of the people.[24]

Gladstone, another economic liberalist and the leader of the Liberal Party at that time,

23 The following arguments were made throughout the debate concerning economic freedom: (1) a monopoly by one company is not acceptable, as it would disturb free competition; (2) competition between companies should be promoted, and the state should not intervene; (3) state intervention in the market is not desirable; and (4) it was desirable for efficiency to be high, and it is a fair criterion of assessment.

24 *Hansard*, HC Deb 9 June 1868, vol. 192, cc. 1301-33. We wish to point out that Edwin Chadwick, a social reformer, was in favour of the nationalisation of the railway. This is seen in correspondence between Scudamore and Chadwick (UCL Special Collections: NRA 21653 Chadwick).

cautiously defined the conditions for nationalisation, although initially he was the driving force behind the Bill.

> If, however, the Government obtained a monopoly, a great deal might be said in favour of their possessing it, upon the same principle as they had the management of the Post Office. But the Bill did not go to that extent; and the question was an exceedingly large one.[25]

As a result of this consideration, he supported the Bill against his own liberal principle – a principle that stood in opposition to monopolies.

It was during the Select Committee sessions held in 1868 that the opponents of the Bill withheld the principle of the freedom of entry and conceded that the state's role would help guarantee public interests.[26] Because the Bill was to be handled in Parliament (the ultimate venue in the kingdom for public discourse), it must not have sufficed to pass the Bill in opposition to the telegraph companies if the major parties only agreed to the nationalisation of telegraph services for their own personal interests. The supporting parties had to propose a framework by which to affirm consent to a nonpartisan agreement. This framework was constructed on the notion of 'public interest', which worked to modify the liberal concept of the liberty of trade.

OPPONENTS: 1) TELEGRAPH COMPANIES

Recognition of the public interest in telegraph services can be seen in the discourse of various groups and individuals during the Select Committee meetings. The first witness called during the session of 1 July was Scudamore, who had drafted the Bill. Questions were asked concerning the introduction of the Bill; government intervention in telegraph services itself was under fire. It appears that a pamphlet published in 1868 by the companies prior to the session entitled *Government and the Telegraphs: Statement of the Case of the Electric and International Telegraph Company against the Government Bill for Acquiring the Telegraphs* had a significant influence on the debate. The pamphlet made the following points: (1) there was not sufficient debate before the Bill was passed; (2) the statement of the introduction, namely, that telegraph is not well-founded in Britain and Ireland, ignores 20

25 Ibid.

26 The following is an example of the recognition of the public interest in telegraph services. Stafford Henry Northcote, the Secretary of State for India, said that the 'effect of that would be to cause a considerable inconvenience, so he was informed, to the telegraph companies. It kept them in a state of agitation and uneasiness for an unnecessary length of time, and it deferred a great social improvement, on which he believed the mind of the country was set, and which he believed would be very advantageous to the public; and all for a very insufficient and, to him, incomprehensible reason' (Second Reading, HC Deb 9 June 1868). The following, on the other hand, speaks to the opinion that telegraph communication should be improved through the postal administration system. Thomas Cave, a Member of Parliament from the Liberal Party, said that he 'hoped that when the Bill became law, as in this or the next Session he felt confident would be the case, the telegraphic system would continue to grow, and still more rapidly than before; that the Government would extend the system to every Post Office throughout the country; and, with regard to rates, that a 2 d. postage stamp would in time cover a telegraphic messages from any Post Office in the United Kingdom' (Second Reading, HC Deb 9 June 1868).

years of efforts by telegraph companies to respond to petitions, build networks (even in unprofitable areas outside large cities), create more than 1,300 base stations, erect 60,000 miles of telegraph wires, and educate 3,000 personnel; (3) increasing the numbers of users and future competition among companies would reduce the price, which was said to be expensive; (4) according to the Bill, the costs associated with expensive patented equipment had not been paid; (5) it was very unlikely that adequate maintenance work to the enormous telegraph infrastructure could be funded by revenues collected from such a low-priced service; (6) the examples of Belgium and Switzerland could not inform nationalisation in Britain; (7) the government's management of telegraph services was not favourable, for example, there was the danger of leaking confidential information; and (8) there was no reference made to telegraph services supplied by the railway companies.

Concerning this eighth point, the pamphlet criticized Scudamore's comparisons of the ratios of post to telegraph service use in Belgium, Switzerland and Britain in 1860 and 1866, which were 218:1 and 37:1, 84:1 and 69:1, and 296:1 and 121:1, respectively. Scudamore's analysis, says the pamphlet, ignored differences between the two mediums in terms of the sentences used therein. His analysis, which served as a foundation for the Bill, did not take into account the scale of these countries and the differences among them in terms of customs. The pamphlet also points out that the flow of telegraph messages passes through the national boundaries of Belgium and Switzerland but that in Britain, a telegraph message was actually dispatched and received, and thus an extra delivery cost should be levied. Furthermore, both Belgium and Switzerland compensated for losses relating to the domestic telegraph with revenues from foreign redirection, although the nationalised railways in those countries were not required to pay for telegraphs. The pamphlet claimed that a nationalised telegraph business would be financially inefficient and would generate losses rather than profits. These same arguments were made during the session.

OPPONENTS: 2) RAILWAY COMPANIES

Railway companies were involved in telegraph services from the very start, as they used this medium to coordinate trains. Moreover, railway companies sometimes owned networks for their own use and their networks were also to be purchased by the government by way of the Act. First, they opposed the purchase on the grounds that it would endanger the safety of the railway, as they suspected that government information could take priority over railway information. Second, they were also concerned about the government interfering with their private property, as the Bill stated that wayleaves, space, and land for telegraphic posts would be included in the purchase.

Both Scudamore and the Chancellor of the Exchequer answered the first of these concerns saying that following nationalisation, railway safety would remain the first priority. They also stated that there would be compensation for wayleaves. At this point, the opposing voices of the railway industry were weakened.[27]

27 Scudamore promised these results as they were typically performed through the electric telegraph service in support of

SUPPORTERS: WHEATSTONE, W. S. JEVONS, AND SCUDAMORE

Charles Wheatstone, a well-known scientist and the inventor of practical telegraphic equipment, supported the Bill when he was called to the Committee to provide his expert opinion. At the session held on 6 July, he pointed out that because a considerable investment would be necessary, it would be difficult to establish a new company that could compete with the existing companies. He argued that competition would ultimately result in a private monopoly in the market. Therefore, he said, a state monopoly on telegraph services was preferable. He also asserted that, when properly encrypted, the contents of all communications could be guaranteed to be confidential.

Jevons, a well-known liberal economist, gave his expert opinion on the matter at the same session, as well as at the Royal Commission on International Coinage held on 24 April.[28] Following the Committee session, he defined four conditions under which the nationalisation of telegraph services would derive benefits: (1) many broad activities have efficiently combined, integrated, and adjusted in the comprehensive system of the government; (2) these activities have been performed universally and according to rules; (3) activities will be performed before the eye of the public, or under the surveillance of individuals who will instantaneously detect and prosecute any fault; and (4) there are very small expenditures related to stocks, and so annual revenues and accounts will very precisely reflect actual exchanges within the sector.[29] These were outlined in his pamphlet published in 1867, entitled *On the Analogy between the Post Office, Telegraph, and Other Systems of Conveyance of the United Kingdom, as Regards Government Control*. Jevons assured opponents of the Bill that the nationalisation of telegraph services would satisfy these conditions. At the Committee session, he stated that government investments would be made if it would ensure a universal nationwide telegraph rate.

Scudamore's argument in support of the Bill was based on examples of the successful nationalised telegraph services in Belgium and Switzerland. To introduce a state monopoly into telegraph services in Britain, he demanded the following conditions: (1) the conveyance of one message containing up to 20 words would cost 1 shilling, regardless of distance; (2) operators would receive proper training as specialists, and the handling of telegraphs by the Post Office system would prevent delays and typographical errors; (3) facilities would be established in the cities of Scotland, Wales, and Ireland; and (4) messages would henceforth be encrypted. Against criticism, he presented the demands of several Chambers of Commerce nationwide that were asking for the government to establish stations and introduce of a universal rate, as many of the existing stations were inconveniently located and the price was very expensive. He gave examples of nationalised telegraph services in Belgium, Switzerland, and France, which charged low business rates. He made assurances

railway operations (1–2 July, Special Committees). The Chancellor of the Exchequer, in the House of Commons, also recognized the use and management of telegraphic communication as requites for railway operation (Second Reading, 21 July).

28 Walter Bagehot, an economist, and Goschen, a member of the Select Committee of the Bill, appeared as witnesses.

29 See Inoue Takutoshi, *Jevons no Shiso to Keizaigaku: Kagakusha kara Keizai-gakusha he* [*Jevons's Thought and Economics*], Tokyo: Nippon Hyoron-sha 1987, 221.

that the extra charges that were common in these countries would not be levied in Britain. Concerning delays and typographical errors, he explained that under government management, 30,000 Money Order Offices could serve as stations. The government could also oversee the training of operators. Regarding the leakage of information, he pointed out that there had been no serious cases within the postal service, and that the same system would be applied to telegraph services. He also asserted that civil servants were much more trustworthy than private employees were.

It is evident from these speeches before Parliament that the supporters of the Bill thought that the rapid and efficient establishment of a nationwide network, which would offer the general public easy access to telegraph services, was a matter of public interest.

2.2. Structure of the Political Discourse of the Debates on the Bill

From a managerial perspective, the nationalisation of telegraph services was not a success story. When Scudamore drafted the Bill, his estimation of the acquisition costs was overly optimistic and this later caused several difficulties. The purchase price, as well as the treatment of networks and patents owned by companies, had to be precisely defined. As a result, 12 articles were added to the original 12 articles of the Bill. Furthermore, it became clear that more money was needed to finalize the acquisition and to pay the salaries and pensions of employees. Against initial expectations, the government failed to make a profit, and Jevons changed his evaluation. He became cautious on the profitability of nationalised telegraph services in his articles entitled *The Railway and the State* published in 1874 and *The Post Office, Telegraphs and their Financial Results* in 1875. Additionally, he assessed nationalisation as being a financial failure.

However, the financial perspective was not overly important to the supporters of the Bill. They emphasized the public nature of telegraph services and its convenience for the general public, as Scudamore and Thomas Allan explained in the following speeches to the Committee.

> Witness: Scudamore (1 July)
> Q 82. Do you consider also, that telegraphic means of communication is of importance to the whole community, and ought to be placed within their reach?
> A. I do.
> …
> Q 85. And that mere private speculators for the advantage of dividend are not so likely to consider the interests of the public as the Government office would?
> A. I think that they are bound to consider the interests of their shareholders before they consider the interests of the public.
> Q 86. The question of capital and dividend, would not arise if those matters were under the management of a public office?
> A. No. The Post Office would be bound in the interest of the nation to make its system self-supporting undoubtedly, and in doing that they could not avoid making a profit; but profit is not the first object in view.
> …

> Witness: Thomas Allan (7 July)
> Q 1572. Do you think that, unless the Government take the telegraphs into their hands, there is much prospect of a considerable reduction in the rate?
> A. I do not think there is much prospect of a considerable reduction in the rate for manner in which the present companies have worked telegraphs, more especially as they look to dividends and not to carrying out the system as a consumer question.

Even when the business went into the red, the government would not relinquish its management of telegraph services. In 1880, Henry Fawcett, an economist and politician, was appointed Postmaster-General. He proposed a reduction of the telegram rate from 1 shilling to 6 pence, as part of a postal reform. His proposal was implemented after his death under the Conservative government in 1885. However, the government's attachment to telegraph services cannot be explained in terms of the concerns regarding the national security of the empire because there were no arguments whatsoever related to military considerations or national defence in the debates concerning the Bill.

Once the Act came into effect, nationalisation of telecommunication remained the official policy of the British government, despite the fact that the company's financial accounts after 1892 fell into persistent deficit. This policy contributed to the diffusion of telegraph services in Britain with an increase in the number of stations and the business engagement of post offices as per the Act. Even when telephone use became practically useful, the government was not in favour of leaving telecommunication to the private sector.

Even though there were national security concerns behind the expansion of the network of overseas telegraph services (in the late 19th century) and the establishment of wireless communication (in the early 20th century), politicians, bureaucrats, and scientists promoted the nationalisation of telegraph services in the mid-19th century on the grounds that telecommunication needed to be made available the to the public. Issues of debate included the technical suitability of government control over the business, the sustainability of the 1 shilling telegram rate, and the safeguarding of private information. The 'publicness' or utility of a domestic telegraph network was thought to be a matter of Parliamentary debate and was not considered within the contexts of military use or political advantage. Rather, the concern was information access for the public. The Liberal and Conservative Parties alike shared with supporters the common notion implied in the Bill that information must be made available to the citizens of the country, disputing only which argument was most valid. They did tend to commonly use phrases such as 'for the public', 'for the interest of the public', and 'for the public convenience'. The maintenance and expansion of the system were issues quite separate from the profitability of the business, as they considered telegraphy a public good that must be accessible to the general public. The role of the state lay in the fact that it could maintain and expand the network more rapidly and efficiently than private companies, and it could then secure the 'publicness' of what was then cutting-edge information infrastructure. Ultimately, the notion became acceptable to opposing Liberal Members of Parliament, railway companies, and even some telegraph companies.

Conclusion: The role of the State in Ensuring the Right to Access Information

Once the public nature of information was recognized, defining the role of the state became a major issue in the debates on telegraph nationalisation. Scudamore and Jevons argued that the telegraph had a common 'publicness' in that it offered convenience to all citizens because the state should bear the responsibility of serving the public interest and because it is the largest national body capable of managing telegraph services. As the Select Committee approved the purpose of the Bill, which had in turn been drafted by Scudamore, and the House of Commons passed the Bill sent from the Committee, it seems that the role of the state as the ultimate guardian of public interest was well established in the political discourse of the time.

During Britain's period of liberalism, it accrued a history of state intervention under the banner of 'public interest'. Examples include the development of a police system in the early 19th century, the revision of the General Factory Acts in the 1830s and 1840s, the Education Law in 1833, the Public Health Act in 1848, and the Foster Act in 1870. These policies were promoted primarily with social welfare in mind.

The Act represented positive intervention by the government in the market. This was an infringement on the property rights of individuals. The Act was not promoted for the purpose of the materialization of a cause that related to social welfare and the maintenance of public order. In the 20th century, the nationalisation of several industries followed the essence of the Act, culminating in the establishment of the National Health Service after World War II. Eriguchi explains that the driving force behind the nationalisation of coal, for example, was neither socialism nor social justice, but the concept of industrial efficiency and public interest. If this were the case, the Act was definitely the precursor to nationalisation.[30]

Following discussions concerning the price of acquisition resulting in a subsequent revision to the Act in 1896, the management of telegraph services was nationalised on 28 January 1870 and the nationwide 1 shilling service was henceforth initiated. Figure 1 depicts the rapid increase in the use of telegraph service following the enactment of the Act. These data serve as evidence that the aim of the promoters and supporters of the Bill was to provide telegraph services, as a public good, to the general public. Liberalism in the mid-19th century, along with utilitarianism and socialism, could accept and promote state intervention in the name of promoting the public interest.

30 Eriguchi Taku, *Fukushi-kokka no Koritu to Seigyo: Webb Fusai no Keizai-shiso* [*Efficiency and Control of the Welfare State: the Economic thought of Webbs*], Kyoto: Showado 2008.

Programme of

8th Anglo-Japanese Conference of Historians

Changing Networks and Power in British History: Politics, Society, Trade

held

10-11 August 2015

at

Osaka University Nakanoshima Center

Monday 10 August

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Junior Session

Chair: Kentaro Saito (Kyoto Sangyo University, Japan)

James Kirby (Trinity College, University of Cambridge, UK)

Networks of knowledge: Universities, churches and society, 1800-1920

Sayaka Nakagomi (Institute of Education, University of London, UK)

Why were "domestic subjects" introduced into English middle-class girls' high schools between 1871 and 1914 ?

Haruki Inagaki (King's College, University of London, UK)

Indian roots of British imperial politics: Conflict between the executive and the judiciary in Bombay in the 1820s

Kyoko Matsunami (Nagoya University Library, Japan)

Public interest in the debates on the electric telegraphs bill of 1868 in Britain

Plenary Lecture I

Martin Daunton (University of Cambridge, UK)

State, market and society in Britain since 1815

Session 1: Civil Society and Liberalism in Victorian Britain

Chair: Chikashi Sakashita (Tokyo Women's University, Japan)

Richard Huzzey (University of Liverpool, UK)

The moral economy of the nightwatchman state: Free trade and laissez-faire in Victorian Britain

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Meiji Japan's encounter with the "English system" of infectious disease control: the "Hesperia Incident" of 1879

Minoru Takada (Konan University, Japan)

Mutual-help, money, and the state: the transformation of friendly societies in the late-nineteenth century

Plenary Lecture II

Joanna Innes (University of Oxford, UK)

Networks and British history: uses and abuses?

Tuesday 11 August

Session 2: Education and industry in changing networks and power

Chair: Kentaro Saito (Kyoto Sangyo University, Japan)

Lawrence Goldman (IHR, University of London, UK)

Civil society versus the state: conflicts in British education since 1800

Makiko Santoki (Hiroshima University, Japan)

Who should take the responsibility to children's vocational training? Education in Manchester certificated industrial school

Hiroshi Ichihara (Dokkyo University, Japan)

The human resource development and occupation/status linked personnel management practices and engineers in Japanese corporations before the Second World War

Commentators: David Mitich (University of Maryland, USA) and Minoru Sawai (Osaka University, Japan)

Session 3: Asian trade and the Remaking of Commercial Networks & Consumer Culture in Modern Britain

Chair: Shigeru Akita (Osaka University, Japan)

Giorgio Riello (University of Warwick, UK)

Indian cottons and British trade: the connection between the Indian and Atlantic Oceans in the long eighteenth century

Yukihisa Kumagai (Kansai University, Japan)

The making of "free trade nation" in the structural change of Asian trade and the growth of British manufacturing industry, 1790s-1830s

Young-Suk Lee (Kwangju University, Korea)

The Competition of cotton goods between India and Britain: rethinking some contemporaries' consciousness of Indian handicraft industry

John Styles (University of Hertfordshire, UK)

Fashion, textiles and the origins of the Industrial Revolution

Commentator: Chiaki Yamamoto (Osaka University, Japan) and Takeshi Nishimura (Kansai University, Japan)

Concluding Session

Patrick K. O'Brien (London School of Economics, UK)

Was the British Industrial Revolution a conjuncture in global history?

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The East Asian Journal of British History, Vol. 5 (2016)

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