

The European Response to Indian Cottons

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Introduction

From the mid-seventeenth century consumers in Europe welcomed the import of Indian cotton textiles for their beauty, convenience and low price. European cloth manufacturers were less welcoming as they saw the Indian goods as a threat to their livelihoods. In a number of areas of Europe, opposition was voiced almost immediately and agitations launched to block competition from the subcontinent. Antipathy was not the only response to Indian stuff, however. From the late seventeenth century, opposition to Indian cloth imports was combined with efforts to imitate them. In western, southern and central Europe, cloth printers set up shop with plain white calicoes from India and sought to reproduce the chintzes that were so characteristic of the subcontinent. The growth of printing on cotton led spinners and weavers to work with the largely unfamiliar fibre of the cotton plant to manufacture the wide variety of plain, striped, and checked cloths that were so desired in Europe, west Africa and America. At times, the silk and wool opponents of Indian imports turned their fury upon local cotton manufacturers who were taking over textile markets with the newfangled cotton stuff.

The future was to be with cotton, however. From its home in the Indian subcontinent, the art of turning the cotton boll into cloth of extraordinary comfort and versatility migrated to Europe. Starting with imitation in the seventeenth century, less than two hundred years later, and certainly by 1850, western Europe became the centre of world cotton manufacturing. The migration of this industry marked a great transformation in the world

economy as the Indian subcontinent was displaced as the major supplier of textiles to the world market. That honour had fallen to the hands of the leading cotton manufacturers of Europe, especially those in Britain. Therefore, this shift is of seminal importance in the divergence of paths of economic development across Eurasia.

Imitation of Indian Cottons: Calico Printing

While established textile interests in Europe wanted to protect themselves from Indian competition, new manufacturers arose who sought to imitate the Indian goods and to produce them at home. The earliest of these attempts centred upon calico printing. In the 1640s printing on cotton cloth began in Marseilles. It is not surprising that this French port led the way, given its longstanding trade connections with the eastern Mediterranean. But within a few decades, cotton printing works were established in London, Amersfoort (near Amsterdam), Berlin, Frankfurt, Hamburg and Bremen and in the Swiss cities of Neuchatel, Lausanne and Geneva. In the eighteenth century cotton printing spread to many towns and cities across the continent, including Dublin, Antwerp, Stockholm, Copenhagen, Barcelona, Vienna, Munich, St. Petersburg, Moscow, Prague and Nuremberg. In the eighteenth century, printed cottons became a major item of trade in Europe and gave rise to many fortunes, including those of the Rothschilds, who amassed the capital for their banking operations in the “*circuit de l’indienne*.”¹ According to Chapman and Chassagne, in 1776 “printed cottons became the most important fashion goods at the Leipzig fair,” the trading hub of central Europe.

¹ S. D. Chapman and Serge Chassagne, *European Textile Printers in the Eighteenth Century: A Study of Peel and Oberkampf* (London, 1981), p. 5.

Dyeing and printing cloth with designs had long been practiced in Europe. Since at least medieval times, linen had been printed with oil-based stains, but the colours were not fast and the colouring agents often gave off a disagreeable odour, according to Paul Schwartz. These defects made such materials unsuitable for clothing or furnishings.² In addition, much of the printing was done with black patterns on a solid background, which was a far cry from the vibrant colours of the Indian goods. As one historian of chintz has put it: “There is no mistaking the Indian native work which was distinguished by the excellence of colouring—glorious rich tones of rose, from dark crimsons to delicate hues of pink, purples graduating to lovely lilacs, pastel shades of blues and other colourings printed into the designs.”³

Imitating Indian stuff then required expanding the repertoire of dyestuffs and of discovering methods by which these colours could be made fast. It also required the development of these techniques for cotton cloth, a material that Europeans had little experience with or knowledge of. Several early calico printers received technical assistance from knowledgeable dyers and printers in the eastern Mediterranean where the art of cloth printing had been transmitted from its home in the Indian subcontinent. In Marseilles, two “master craftsman of chintzes” formed a partnership on February 1, 1672, and hired two Armenians ‘to paint fabrics in the style of the Levant and Persia.’ The printing works in Amersfoort was founded in 1678 with the assistance of a printer from the Anatolian port of Izmir who provided expertise to local manufacturers.⁴ The east to west migration of technical

² Paul Schwartz, “Textile Printing,” in Maurice Daumas (ed.), *A History of Technology and Invention*, trans. Eileen B. Hennessy (New York, 1979), vol. 3, p. 633. Also see Maureen Fennell Mazzaoui, *The Italian Cotton Industry in the Later Middle Ages 1100-1600* (Cambridge, 1981), p. 96.

³ Frank Lewis, *English Chintz: A History of Printed Fabrics from Earliest Times to the Present Day* (Leigh-on-Sea, Essex, 1942), p. 12.

⁴ Schwartz, “Textile Printing,” p. 638.

experts continued well into the eighteenth century. The elusive secret of Turkey red, which had originated in India and spread to Turkey and Greece, was introduced into France in the late 1740s by an Armenian, Johann Althen, who was brought to Avignon under the auspices of the French Secretary of State, Bertin. A statue of Althen was erected in Avignon to honour his contribution to the cloth industry in that city. In 1747, French manufacturers engaged the services of Greek dyers.⁵

Technical details on dyeing and printing cotton cloth may have also been transmitted to Europeans by traders and travellers to the subcontinent who produced descriptions of Indian methods. Examples of these survive from the late seventeenth century. In 1678 an employee of the French Compagnie des Indes produced a report that included two chapters on the printing of chintz. In the eighteenth century a number of French Jesuits produced detailed descriptions of Indian methods and these became the basis for textbooks on cloth printing in France and Britain in the closing decades of the eighteenth century. In this period there was a veritable flood of works on this topic: Quarellès' *Traite sur les Toiles Peintes* (1760), Delormois' *L'Art de Faire l'Indienne* (1770), D'Apligny's *L'Art de la Teinture des Fils et Etoffes de Coton* (1776), *A Treatise on Calico Printing* (1792), and *L'Art de Peindre les Toiles* (1800). The Jesuit letters were also consulted by Bancroft for his monumental *Experimental Researches Concerning the Philosophy of Permanent Colors* (1813).⁶ Edgard Depitre has written: "As much was written in the seventeenth and eighteenth centuries on the subject of 'toiles peintes' as on the subject of cereals so that it occupied the central authorities and inflamed the people: for three-quarters

⁵ George P. Baker, *Calico Painting and Printing in the East Indies in the XVIIth and XVIIIth Centuries* (London, 1921), p. 43.

⁶ For further details see Baker, *Calico Painting and Printing*, p.. 17.

of a century it remained established a burning problem and created lively discussions; it was the object of two edicts, and some eighty decrees in council.”⁷

According to Wadsworth and Mann, the early printing works in Holland and elsewhere in Europe began with imitations of Patnas, which contained only two colours, and Surats, which had only one, and neither was “remarkable for the technical perfection of the impression.”⁸ Animal fibers were not suitable for printing due to their “special affinity for tinctorial materials,” as Paul Schwartz put it.⁹ Attempts to print on wool yielded only crude designs or fabrics that were not washable. Printing on silk “was one of the most difficult processes to perform successfully” and “true whites could not be obtained.”¹⁰ Cloth made from vegetable fibres became the only option for the painting and printing of cloth in imitation of Indian goods and European calico printers turned to cotton, linen, and cloth made of a mixture of cotton and linen for their work.

Of these, both manufacturers and consumers in Europe preferred cotton cloth for the production of chintz. Claudius Rey, a London weaver, wrote in 1719: “The first class [of women] are clothed with out-law’d India-Chints; those of the second with English and Dutch printed calicoes; those of the Third with ordinary Calicoes, and printed Linnen; and those of the last, with ordinary printed Linnen.”¹¹ In 1732 a survey of Barcelona cloth merchants found that three-fourths of the calicoes in their inventories were made from all-cotton cloth. Of the remaining quarter, the bulk was made from cloth that was a mixture of cotton and linen and a small quantity from

⁷ Quoted in Baker, *Calico Painting and Printing*, p. 50

⁸ Wadsworth and Mann, *The Cotton Trade*, p. 131.

⁹ Schwartz, “Textile Printing,” p. 651.

¹⁰ Schwartz, “Textile Printing,” p. 652.

¹¹ Claudius Rey, *The Weavers True Case; or, the Wearing of Printed Calicoes and Linnen Destructive to the Woollen and Silk Manufacturies* (London, 1719), p. 39.

purely linen. Virtually all of the cotton cloth was of high quality weave: the finer the cloth, the sharper and clearer the designs that could be imprinted.¹²

In the early decades of the eighteenth century, there was a clearly defined quality and status hierarchy in which Indian was superior to European and cotton preferred over linen. According to P. J. Thomas, Indian printing was considered superior to that of Europe because to the higher classes, “the calicoes printed in Holland and England were considered too vulgar for them.”¹³ Cotton cloth trumped linen because it took colours better (“Flax took colour with greater difficulty than cotton,” according to a leading expert.¹⁴), but its higher price restricted its consumption. This hierarchy of cloth types was disturbed, however, when restrictions began to be placed on the importation of Indian goods and the consumption of cotton cloth itself in several nations of Europe in the early eighteenth century. In Barcelona, a ban on textile imports from Asia was enacted in 1717-18.¹⁵ The purpose of this restriction was to encourage the weaving of cotton cloth locally to supply an indigenous printing industry.

In Britain, the wearing of cotton cloth, with the exception of muslins and blue-dyed calicoes, was made illegal in 1721. The purpose of this ban was to protect the sizable wool and silk industries from the encroachment of the foreign fibre, cotton. Printers were permitted to import Indian white cloth to manufacture chintz for export, but for the majority of local consumers, although some Indian cloth was smuggled into the kingdom, locally made substitutes to cotton cloth would have to suffice. In the 1720s, there was greater printing on Irish and Scottish linen cloth, but these textiles did not

¹² J. K. J. Thomson, *A Distinctive Industrialization: Cotton in Barcelona, 1728-1832* (Cambridge, 1992), pp. 64-5.

¹³ Thomas, *Mercantilism and the East India Trade*, p. 133.

¹⁴ Schwartz, “Textile Printing,” p. 640.

¹⁵ Thomson, *Distinctive Industrialization*, pp. 68-9.

meet the demands of fine printing that had been formerly done on the higher quality Indian calicoes. This market was met with imports of linen cloth from Germany. This higher quality linen, however, began to be replaced with a locally made mixture of linen warps and cotton wefts that was marketed under the name of fustians. Such mixed cloths had been manufactured in Britain for several decades, and in Europe for a few centuries, but these new mixed fabrics were lighter than the traditional fustians and were really a new variety of cloth altogether. The addition of cotton may have lent fustians a closer resemblance to Indian calicoes, but their chief advantage over German linen appears to have been one of price. Locally manufactured stuff was not subject to transport costs and import duties.

While printing on linen-cotton mixtures expanded for the local market, such cloth proved to be an imperfect substitute for Indian all-cotton calico. According to one historian of the printing industry in Britain, the fustian was a “less suitable fabric” for printing: “In 1720 the developing industry received a severe blow. At the instigation of the established wool and silk interests legislation was enacted prohibiting the use at home of all cottons printed in England. Thereafter, the London printers were limited to working for export, or to printing, for the home market, on a less suitable fabric with a linen warp and cotton weft.”¹⁶ From the standpoint of the consumer, the linen-cotton cloth may have been less suitable for several reasons, including comfort, convenience, and colour. The issue of colour may have been critical from the standpoint of the manufacturer as “some dyes took differently on cotton and linen, producing a speckled effect”¹⁷

¹⁶ Victoria and Albert Museum, *English Printed Textiles 1720-1836* (London, 1960), p. 1.

¹⁷ Wendy Hefford, *The Victoria and Albert Museum's Textile Collection: Design for Printed Textiles in England from 1750 to 1850* (New York, 1992), p. 154.

The problem of printing on fustian, and even linen, was eliminated in the 1770s after Arkwright's water frame made possible the weaving of all cotton cloth in Britain. In 1774 Jedidiah Strutt, business partner to Arkwright, displayed at the House of Commons "a Piece of printed, Cotton stuffs (the warp being cotton, and spun by the said machine) manufactured from raw materials, near Blackburn, in Lancashire, which he said was better adapted for printing than any thing of the kind heretofore used for that purpose."¹⁸

The West African Trade

European traders marketed Indian cottons on the west coast of Africa from at least the seventeenth century. In the 1670s factors of the Royal African Company sold printed calicoes, chintzes, indigo-dyed calicoes and a variety of checked and striped cotton textiles which had been imported to England from the subcontinent and then re-exported.¹⁹ By the early eighteenth century, Indian cottons had become a linchpin in European trade in West Africa: between 1720 and 1740, Indian goods accounted for a third of British exports to Africa. From the 1740s, Indian cloth represented a smaller fraction of British exports, but the quantity of Indian textiles sold in west Africa exploded because of the tremendous expansion in the slave trade in the second half of the eighteenth century.

In light of the popularity of these Indian products, from the late seventeenth century European cotton manufacturers set out to produce their own versions of that stuff, especially the striped and checked cloths that west Africans so highly prized. The Dutch appear to have taken the lead in these imitations of Indian goods and as early as 1680, the records of traders

¹⁸ *Journals of the House of Commons*, vol. 34, 5/6/1774, p. 709.

¹⁹ T/70/20, pp. 3, 10-12, 15-7, etc., PRO.

in west Africa report on demand for Holland gingham and Dutch vimbarees.²⁰ From 1700, annabasses manufactured in Holland were exchanged for slaves.²¹ British manufactures were also in evidence from the early eighteenth century, when Blackburn checks began to appear in the accounts of goods sold in west Africa. French imitations of Indian cottons commenced several decades later.

For the first several decades of the eighteenth century, the market in west Africa for these European imitations was limited because European manufacturers were unable to match the Indian stuff in either price or quality.

The quality problems were few in number, but serious in scope. To manufacture checked and striped cloth, yarn was first dyed a variety of colours, ranging from blues to reds to greens and yellows. Europeans had a far easier time in imitating varieties that contained only blue as they dyed in that colour with some success. Reds were very difficult to match and for several decades Europeans searched for the secret of the red dyes that were used not only in the subcontinent but also in Turkey. The search for Turkey red was a major preoccupation of the Royal Society of Arts in London, for example. In the case of some cloth varieties, Africans refused to purchase British imitations because they discovered that the colours bled upon washing, an accusation that was never levelled at Indian cloth. Because of insufficient knowledge of dyeing cotton and linen, some varieties of checks for the African market were manufactured with dyed worsted yarn mixed with either cotton or linen. This was not a serious competitor to the authentic Indian stuff.

In terms of quality, an even more serious shortcoming of the European imitations was that very few of them were manufactured purely from cotton.

²⁰ T/70/120, pp. 30 & 44, PRO.

²¹ Wadsworth and Mann.

The European versions of Indian checks and stripes relied upon linen yarns for the warp and confined cotton yarns to the weft. Naturally, this produced a cloth that was far different from the originals in texture and colour, as linen was stiffer and took dyes differently from cotton. In most cases, the mixed linen and cotton fabrics were less desirable in the eyes of West Africans than the all-cotton originals. This is why in the eighteenth century merchants who traded on the west African coast urged the manufacturers of Lancashire to make their cloth with more cotton.

By the mid-eighteenth century the quality of European goods had improved and there were even reports of Manchester imitations being preferred over the Indian originals. Nevertheless, in general, Indian goods continued to hold the upper hand. In 1765, the slave-trading merchants of Liverpool wrote:

The East India Company for many years past, have not had a sufficient quantity of sundry sorts of goods proper for the African Trade, denominated Prohibited Piece Goods etc. which has obliged your memorialists to send several ships to Holland for the same, the consequence of which is, a great sum of money is laid out there, in buying other goods for assortments, as also, in the equipments of the ships, which wou'd otherwise have centred amongst the Manufacturers & others of this Kingdom. That the manufactures of this Kingdom exported to Africa are woolens, arms & other ironware, hats, gunpowder, brass and copper wares commonly battery, Pewter, lead etc as also checks & other goods made at Manchester in imitation of East India Goods, which the latter are at high prices, or not to be got, but some they cannot imitate & their imitation of many kinds is but indifferent.

Two decades later, in 1785, French merchants visiting Manchester were astonished at the high quality of the cotton cloth produced in the town.

What had happened in the intervening twenty years? One significant advance was in the art of dyeing. The Turkish method of colouring red had

been transferred to Britain by the 1780s, but far more significant than developments in dyeing was the invention of machinery that could spin higher quality cotton yarns at far lower prices. These machines literally transformed overnight the quality of Manchester goods. The first of these machines, James Hargreaves' spinning jenny, dramatically lowered the costs of spinning cotton yarn for the weft, which was a major achievement but not one that pushed forward the quest for an all-cotton fabric. This was attained only after Richard Arkwright's water frame, which created in Europe the capacity to produce cotton warp yarn on a large scale. Within a few years the jenny and water frame were supplemented by Samuel Crompton's hybrid machine aptly named the mule, which spun yarn that was the equal of the finest cotton material of the subcontinent.

Since the late eighteenth century two major arguments have been put forward on the economic conditions that produced these technological breakthroughs in spinning. The first of these arguments sees Indian cotton cloth as providing the inspiration for the British cotton industry. According to this view, technological change emerged out of the need to compete with Indian goods, which required the manufacture of higher *quality* yarns. The second argument, which has become the conventional wisdom on the early cotton industry, centres on the extent of the market and division of labour as being the driving forces for technical innovation. In this framework, as is implied by the extent of the market, the problem that the British textile industry faced was an insufficient *quantity* of yarn and the force driving the development of machinery was purely quantitative. The purpose of this paper is to construct a genealogy, so to speak, of these arguments, with particular focus on the eighteenth-century sources that have been used to buttress them.

A close analysis of these arguments will allow an examination of the impact that theoretical developments in economic thinking have had on the writing of economic history. It will also allow us to consider some of the ways in which the rise of economic theory, especially in the wake of Adam Smith, has contributed to a Euro-centrism of historical accounts.

Histories of the British Cotton Industry

The first comprehensive history of the cotton industry in Britain was the work of Edward Baines and appeared in 1835. Baines initially published an outline of the work in his father's *History of the County Palatine of Lancaster* and J. McCulloch and others encouraged him to enlarge the work and publish it separately. The purpose of Baines' work was to "record the rise, progress, and present state of this great manufacture," which, as Baines noted in his preface, provided the economic support for a million of a half individuals in England and Scotland and accounted for nearly half of the exports of Great Britain.²²

Baines began his sprawling work in India, which he described as "the birthplace of the Cotton Manufacture" and "where it probably flourished long before the date of authentic history." In describing the trade in cotton cloth, Baines wrote, "The commerce of the Indians in these fabrics has been extensive, from the Christian era to the end of the last century. For many hundred years, Persia, Arabia, Syria, Egypt, Abyssinia, and all the eastern parts of Africa, were supplied with a considerable portion of their cottons and muslins, and with all which they consumed of the finest qualities, from the marts of India . . . Owing to the beauty and cheapness of Indian muslins,

²² Edward Baines, *History of the Cotton Manufacture in Great Britain* (London, 1835), pp. 6 & 7.

chintzes, and calicoes, there was a period when the manufacturers of all the countries of Europe were apprehensive of being ruined by their competition.”²³

From the perspective of India, Baines proceeded to describe England as “the second birth-place of the art” of cotton manufacturing. Baines was well aware that cotton cloth manufacturing moved from east to west and that technological change in the late eighteenth century produced a “wonderful commercial revolution . . . effected by the machinery of England.” Or as he elaborated, “The Indians have not lost their former skill; but a power has arisen in England, which has robbed them of their ancient ascendancy, turned back the tide of commerce, and made it run more rapidly against the Oriental.”²⁴

Baines lost sight of the Indian connection when he turned to the beginnings of innovation, however.

None but the strong cottons, such as fustians and dimities, were as yet made in England, and for these the demand must always have been limited. Yet at present the demand exceeded the supply, and the modes of manufacture were such as greatly to impede the increase of production. The weaver was continually pressing upon the spinner. The processes of spinning and weaving were generally performed in the same cottage, but the weaver’s own family could not supply him with a sufficient quantity of weft, and he had with much pains to collect it from neighbouring spinsters. Thus his time was wasted, and . . . the seller could put her own price.²⁵

²³ Baines, *History of Cotton Manufacture*, pp. 19, 76-7.

²⁴ Baines, *History of Cotton Manufacture*, pp. 19-20, 77, 81.

²⁵ Baines, *History of Cotton Manufacture*, p. 115.

For Baines, the invention of spinning machinery was propelled by the forces of the market and the imbalance between supply and demand. These innovations were not connected in any way to Indian cotton textiles.

This approach to the early British cotton industry came to be reproduced in subsequent works. A striking example is Paul Mantoux, who declared the British cotton industry to be “the child of the East Indian trade.” Yet, the invention of machinery in spinning, according to Mantoux, emerged from the disequilibrium in the yarn market: “The widening gap between spinning and weaving was producing real uneasiness in the industry. There was much unemployment among weavers, and merchants were always wondering how they could manage to satisfy the ever-growing demand.”²⁶

Not all nineteenth-century writers followed Baines’ lead in not linking Indian cottons with innovation, however. Thomas Ellison, for example, drew a more explicit connection between the two: “The popularity of [Indian] goods suggested the obvious desirability of making a still further approach to the Indian article by producing a fabric composed entirely of cotton; but in the absence of a machine capable of turning out a yarn hard and strong enough to be used as warp (hitherto supplied by linen), this was found to be impossible; and it was to the production of such a machine that the efforts of the mechanics of the time were now directed.”²⁷ Nevertheless, when elaborating upon the course of invention, he drew upon Baines, as well as Andre Ure, and pointed to imbalances between spinning and weaving as playing the decisive role. A similar analysis may be found in Wadsworth’s and Mann’s magisterial study of the cotton industry, where the authors were

²⁶ Paul Mantoux, *The Industrial Revolution in the Eighteenth Century: An Outline of the Beginnings of the Modern Factory System in England* (Chicago, 1983; reprint of revised edition of London, 1961), pp. 203, 217.

²⁷ Thomas Ellison, *The Cotton Trade of Great Britain* (London, 1886), p. 13.

keenly aware of the importance of the Indian example, yet innovation was explained by supply and demand in yarn markets.²⁸

From the mid-twentieth century, however, the Indian connection came to be increasingly minimized or neglected altogether. David Landes' authoritative study of European technology and industrialization, *The Unbound Prometheus*, makes only passing reference to Indian cottons. For Landes, far more crucial for technological progress in spinning was "the difference in labour requirements for spinning and weaving: it took at least five wheels to supply one loom, a proportion ordinarily at variance with the composition of the population" and "given the state of technology, the price of yarn rose sharply from the late seventeenth to the mid-eighteenth century." Phyllis Deane agreed with this assessment: "It was practically impossible to get any yarn for weft in the harvest season when women could earn an equivalent wage less laboriously in the fields. Meanwhile there was pressure on the demand side too. There was a marked improvement in the foreign market for cotton manufactures in the 1750's . . . At the same time British population and domestic incomes were increasing and it may be supposed that home demand was rising in step."²⁹

Despite the ubiquity of these arguments on the shortage of yarn as being the source of innovation in spinning, there are surprisingly few eighteenth-century sources that identify it as a major constraint upon textile manufacturing. Baines himself only cited two sources in support of this connection, but one was from the nineteenth century and the other, while

²⁸ Alfred P. Wadsworth and Julia de Lacy Mann, *The Cotton Trade and Industrial Lancashire* (Manchester, 1931).

²⁹ David Landes, *The Unbound Prometheus: Technological Change and Industrial Development in Western Europe from 1750 to the Present*, p. 57; Phyllis Deane, *The First Industrial Revolution*, p. 86.

from the eighteenth, does not make the claim that yarn shortages propelled innovation.

The nineteenth-century source was Richard Guest, who in 1823 published a very short history of the cotton industry. Guest may have been the first to invoke the image of the weaver forced to walk “three or four miles in a morning, and call on five or six spinners, before he could collect weft to serve him for the remainder of the day; and when he wished to weave a piece in shorter time than usual, a new ribbon or gown, was necessary to quicken the exertions of the spinner.” According to Guest, a solution was found when Thomas Highs, a reed maker in Lancashire, “being in the house of one of his neighbours, whose son, a weaver, had come home after a long, ineffectual search for weft, was, by the circumstances, roused to consider whether a machine could not be invented to produce a more plentiful supply of weft.”³⁰ Guest, however, does not support these claims with sources from the eighteenth century.

Baines’ eighteenth-century source was John Aiken’s history of Manchester, published in 1795. Aiken wrote:

From the time that the original system in the fustian branch, of buying pieces in the grey from the weaver, was changed, by delivering them out work, the custom of giving them out weft in the cops, which obtained for a while, grew into disuse, as there was no detecting the knavery of spinners till a piece came in woven; so that the practice was altered, and wool given in warps, the weaver answering for the spinning. And the weavers in a scarcity of spinning have sometimes been paid less for the weft than they gave the spinner, but durst not complain, much less abate the spinner, lest their looms should be unemployed.

³⁰ Richard Guest, *A Compendious History of the Cotton Manufacture* (Manchester, 1823), p. 13-4.

But when spinning jennies were introduced, and children could work upon them, the case was reversed.³¹

Aiken does not appear to have obtained this information from his own research, but from James Ogden who wrote something virtually identical a dozen years earlier.³² Nevertheless, neither Ogden nor Aiken suggests that there was a chronic shortage of yarn. Nor do they suggest that it was shortages of yarn that gave rise to invention. What they say is that regulating the quality of yarn was difficult and that invention made yarn more plentiful, but no more than that.

More Eighteenth-Century Voices

Baines constructed his argument on the factors that led to innovation in cotton spinning on very slim evidence. Nevertheless, his interpretation became the conventional wisdom on the matter and countless discussions of the cotton industry in Britain have appealed to Baines and his sources. Baines was unable to assemble a firmer grounding for his argument in part because eighteenth-century sources largely do not support his interpretation of why there was a drive towards invention.

³¹ James Aiken, *A Description of the Country from Thirty to Forty Miles Round Manchester* (London, 1795, p. 167.

³² "From the time that the original system was changed in the fustian branch, of buying pieces in the grey from the weavers, by delivering out work, the custom of giving them out weft in the cops, which obtained for a while, grew into disuse, as there was no detecting the knavery of spinners till a piece came in woven; so that the practice was changed and wool given with warps, the weaver answering for spinning; and the weavers, in a scarcity of spinning have been paid less for the weft than they gave the spinner, but durst not complain, much less abate the spinner, lest their looms should stand unemployed; but when jennies were introduced and children could work on them, the case was altered." James Ogden, *A Description of Manchester: Giving an Historical Account of those Limits in which the Town was formerly included* (Manchester, 1783), p. 88.

A source that Baines paid only limited attention to, perhaps because of his location in Lancashire, was the Society for the Encouragement of Arts, Manufactures and Commerce. Mantoux has cited a passage from the Society's proceedings announcing a premium, or reward, for a new spinning device that "will spin six threads of wool, flax, hemp, or cotton at one time, and that will require but one person to work and attend it." It created this premium "having been informed that our manufacturers of woollen, linen and cotton find it exceedingly difficult, when the spinners are out at harvest work, to procure a sufficient number of hands to keep their weavers, &c. employed."³³ It is not clear how much stock should be placed in the judgment of the Society for the Encouragement of Arts, Manufactures and Commerce, however, since historians of the Society are in agreement that its ventures in spinning bore very few concrete results.³⁴ Nevertheless, this statement from the society does not point to a chronic imbalance in the yarn market but to a seasonal one. Shortages of spinners at harvest time must also be balanced with the frequent reports of shortages of weavers at that time. In Lancashire there were frequent reports of weavers doing harvest work in the eighteenth century, making it difficult to procure cloth at that time.

The Society's understanding of the economics of spinning also appears to have been contradictory. While pointing to seasonal shortages of yarn, the Society also saw spinning as an occupation for the poor and unemployed. Robert Dossie reported that the Society turned to spinning because "nothing could be more beneficial to the public than the supplying

³³ Cited in Mantoux, *The Industrial Revolution*, p. 215. Yarn shortages at harvest time were not unique to Britain. See Prasannan Parthasarathi, *The Transition to a Colonial Economy: Weavers, Merchants and Kings in South India, 1720-1800* (Cambridge, 2001), chap. 2.

³⁴ Sir Henry Trueman Wood, *A History of the Royal Society of the Arts* (London, 1913), p. 259; Derek Hudson and Kenneth W. Luckhurst, *The Royal Society of Arts 1754-1954* (London, 1954), p. 129.

means to promote the more general application of idle hands to spinning.” He also wrote that the Society sought to increase spinning in workhouses “because there the poor are for the most part, the public loss, maintained by the public in idleness.”³⁵ Neither of these reasons suggests a shortage of labour for spinning, but rather the opposite: an excess supply of labourers. There is also evidence that the Society’s interest in yarn had to do with improving quality. According to Dossie the Society sought “to introduce the spinning those finer kinds of thread, or cotton yarn, which we are at present furnished with from foreign countries.”³⁶ And in 1760, a premium was offered for “spinning not less than hundred pounds weight of cotton yarn, nearest to the sort called *Surat* or *Turkey* cotton yarn.”³⁷

That far more than quantity was at issue in eighteenth-century Britain is also borne out from the papers of Richard Arkwright and Samuel Crompton, towering figures in the history of cotton spinning. In 1774, Arkwright petitioned Parliament for a lowering of duties on calicoes and he wrote that “Warp, made of Cotton which is manufactured in this Kingdom, will be introduced in the Room of the Warps before use, made of Linen Yarn in making *Lancashire* Cottons . . . Goods so made wholly of Cotton will be greatly superior in Quality to the present Species of Cotton Goods made with Linen Yarn Warps, and will bleach, print, wash and wear better, and by Means thereof, find further Employment for the Poor.” Several years later, when recounting the origins of his invention, Arkwright said, “After some Experience, finding that the common Method of preparing the Materials for Spinning (which is essentially necessary to the Perfection of good Yarn) was

³⁵ Robert Dossie, *Memoirs of Agriculture*, p. 93-4.

³⁶ Dossie, *Memoirs of Agriculture and other Oeconomical Arts* (London, 1768), vol. 1, p. 94.

³⁷ *Premiums Offered by the Society Instituted at London for the Encouragement of Arts, Manufactures and Commerce* (London, 1760).

very imperfect, tedious, and expensive, he turned his Thoughts towards the Construction of Engines for that Purpose.”³⁸ Arkwright makes no mention of quantity of yarn, but certainly points to the poor quality of the available material as the major factor in propelling his invention.

Samuel Crompton was taught to spin cotton as a boy and was later apprenticed for a year to a weaver, from whom he learned the art of cotton weaving. In 1802, Crompton, reflecting on his life, wrote, “About the year 1772 I began to endeavour to find out if possible a better method of making cotton yarn than was then in general use being grieved at the bad yarn I had to weave.”³⁹ Several years he elaborated upon this passage. According to Crompton, “At that time all the obstacles which stood in the way of the most extensive and lucrative cotton trade ever known in this country was the want of good spinning . . . a machine was introduced into the cotton for spinning of cotton called a jenny which greatly increased the cotton trade by producing a far greater quantity, so that we began to have warps of a single spun yarn such as they could be produced, but it was of such a quality none but those who had to work it can tell for bad . . . If I could find one good thread of a yard long there were ten bad ones . . . and having full experience of all the process of preparing and spinning on the jenny—as well as on the single spindle—I became inflamed with a strong intense desire to rectify the evils of our then process of preparing and spinning of cotton.”⁴⁰

Elsewhere, Crompton wrote that his mule made possible both the production of goods based on fine yarn “which at that time the trade was much in want of” and “the extention of many sorts of cotton goods that were

³⁸ *The Case of Mr. Richard Arkwright and Company* (London, 1782).

³⁹ Letter to McConnel and Kennedy, Bolton, 30 December 1802, ZCR/6/4, Bolton Central Library.

⁴⁰ Draft of a Letter from Crompton to Sir Joseph Banks, Bolton, 30 October 1807, Egerton MSS, British Library.

made in an inferior manner before.”⁴¹ By what standard were Crompton’s judgments of inferiority and superiority made? And what were the fine goods that were so much in demand? The answer to both these questions is cotton cloth from India. Although Indian calicoes were not permitted to be imported for domestic wear, they were imported on a large scale for the printing industry and then re-exported. And the importation of Indian muslins had never been limited, but the mule made it possible for manufacturers such as Samuel Oldknow to replace the imported item with a locally made stuff. Crompton cited this as one of the great achievements of his invention:

That at the period when your Petitioner surrendered his invention to the Public, the East India Company supplied Great Britain and Ireland with fine muslins and calicoes, all preceding attempts to establish the muslin manufacture having failed, through the want of such yarn as the *Mule* afterwards supplied, which, rapidly superseding Bengal muslins, speedily became a leading article, not alone of home consumption, but of a most extensive and advantageous export trade of British-manufactured muslins and cottons.⁴²

For Arkwright as well Indian cloth was the standard of comparison, which is suggested in the following passage on foreign competition: “All Trade and Manufactures are not confined to *Great Britain*; we have many powerful Rivals: Hence arise a Competition and an Emulation to excel in the Quality, or to render the different Manufactures of a lower Price at Foreign Markets.” He then went on, “ The absolute necessity of the materials being spun before they can be wove into and Kind of Stuff, the Cheapness of Provisions, and the low Price of Labour, in many Foreign Countries, which

⁴¹ Letter to the Merchants Manufacturers Cotton Spinners Bleachers Printers, &c. of these United Kingdoms, Bolton, 25 April 1811, Bolton Central Library, ZCR/15/18.

⁴² Petition from Samuel Crompton to the House of Commons, Bolton, 29 May 1825, Bolton Central Library, ZCR/45/3.

are our Rivals in trade, have occasioned many Attempts at Home to render the Article of Spinning more easy, cheap, and expeditious.”⁴³

These opinions were shared by other observers in Manchester. An anonymous pamphleteer wrote in 1800: “[Arkwright] was the first who made calicoes with cotton warps, and it is probably owing to him, that this branch of our trade is so extensive and in so flourishing a condition. Before that time, coarse calicoes were made with linen warps, procured from abroad, and those of a finer quality were purchased at the sales of the East India Company. The same was the case on the continent . . . Nankeens and gingham are manufactures, which, without the improvements effected by the spinner, could not possible have succeeded. These articles too were formerly brought from the east exclusively. But the most valuable manufacture, which has been created in consequence of the successful application of the spinner to perfect his machinery, is that of muslins.”⁴⁴

The Indian connection was no less important for spinning innovation earlier in the eighteenth century. Wyatt and Paul, who pioneered the roller method of spinning in the 1730s, devoted their machine to the spinning of cotton. They received financial support from two prominent merchants, James Johnson and Samuel Touchet. “Of the three men engaged in the cotton trade who took up the machine, two—Johnson and Touchet—were intimately connected with the manufacture of checks for Africa, and their interests in cheap yarn of a quality comparable with that from India was evidently great enough to encourage them to take considerable risks in the hope of obtaining it.”⁴⁵

⁴³ *The Case of Mr. Richard Arkwright and Company* (London, 1782).

⁴⁴ Mercator, *A Second Letter to the Inhabitants of Manchester on the Exportation of Twist* (Manchester, 1800), pp. 9-10.

⁴⁵ Wadsworth and Mann, *Cotton Trade*, p. 447.

In 1691, one Mr. Barkstead reported to Parliament that he had invented a method “of making calicoes, muslins and other fine cloth of that sort out of the cotton wool of the growth and produce of the Plantations, and the West Indies to a great perfection as those which are brought over and imported from Calicut and other places in the East Indies.”⁴⁶ In 1695 John Cary was of the opinion that “English workmen would exceed the East Indies for calicoes had they encouragement.”

Smithian Political Economy and the British Cotton Industry

The extracts from Arkwright, Crompton and others connected to the early days of the cotton industry in eighteenth-century Britain indicates that in their minds it was the need to produce yarn of a quality that could match Indian-made goods that propelled innovations in spinning. Despite this weight of evidence from the eighteenth century, breakthroughs in spinning have not been interpreted in this way, but rather are seen as originating with problems of quantity of yarn. Therefore, by the 1820s, when Richard Guest’s produced his study of the cotton trade, a shift from quality to quantity had taken place. Some insight into the origins of this shift may be found in John Kennedy’s *Observations on the Rise and Progress of the Cotton Trade in Great Britain*, which was read before the Literary and Philosophical Society of Manchester on November 3, 1815, and subsequently published in the *Memoirs of the Society* in 1819.⁴⁷

John Kennedy was a co-founder of the famous firm of “McConnel and Kennedy, Cotton Spinners,” which was founded in 1795 and in the

⁴⁶ Cited in Thomas, *Mercantilism and the East India Trade*, p. 128.

⁴⁷ This paper was published in John Kennedy, *Miscellaneous Papers, On Subjects Connected with the Manufactures of Lancashire* (Manchester, 1849).

nineteenth century became the largest spinning firm in Manchester. Kennedy knew Samuel Crompton and he was the author of *A Brief Memoir of Samuel Crompton*, which was also read before the Literary and Philosophical Society of Manchester. He was also a close associate of Samuel Oldknow, the great early muslin manufacturer. Edward Baines, in his history of the cotton industry, thanked John Kennedy for his assistance with the work and cited Kennedy's various writings in several sections of the book. Therefore, from all accounts, Kennedy was very thoroughly acquainted with the heady, early days of the cotton industry in Lancashire and acknowledged to be an expert in its history.

Despite this long acquaintance with the industry, Kennedy's *Observations* makes no mention of Indian cottons. Kennedy was certainly not unaware of the role that Indian goods had played in the development of British cottons. In his *A Brief Memoir of Samuel Crompton*, Kennedy noted that Samuel Oldknow "took new ground by copying some of the fabrics imported from India, which at that time supplied this kingdom with all the finer fabrics, and which the mule-spun yarn alone could imitate."⁴⁸ Nevertheless, in his *Observations*, he did not develop this Indian link, but rather followed a very different tack to explain the rise and growth of cotton manufacturing.

Kennedy began with the observation that "there were frequent fluctuations in the demand for cotton fabrics." "Under such circumstances," he proceeded to argue, "when a stagnation took place it was natural that the manufacturer would, rather than be out of employment, endeavour to find a market for his goods in other countries . . . With these new connexions, the manufacturers soon found that they could not supply the increased demand

⁴⁸ Also published in *Miscellaneous Papers, On Subjects Connected with the Manufactures of Lancashire* (Manchester, 1849). The quote is from page 70.

for their new cloths.” This excess demand, according to Kennedy, set in motion an elaboration of the division of labour, beginning within the family and then extending to the neighbourhood. Because of the greater subdivision of tasks “the attention of each being thus directed to fewer objects, they proceeded, imperceptibly, to improvements in the carding and spinning, by first introducing simple improvements in the hand instruments with which they performed these operations, till at length they arrived at a machine, which, though rude and ill constructed, enabled them to produce more in their respective families . . . and invention and ingenuity found their reward in the construction of machinery for carding and spinning.”⁴⁹

In this scheme outlined by Kennedy, one hears more than just slight echoes of Adam Smith, in particular the analysis of the division of labour and market outlined in Book I of the *Wealth of Nations*. Therefore, by the second decade of the nineteenth century, a more theoretical approach to the growth of the cotton industry had made its appearance. This approach was grounded in Smithian political economy and appealed to the self-equilibrating powers of the market economy and to the division of labour and the extent of the market as the significant forces propelling economic growth and change, culminating with the invention of machinery itself. With this framework, and the central place it accords to the extent of the market, it is not surprising that the early nineteenth century accounts of Richard Guest, published in 1823, and Edward Baines, which appeared in 1835, came to see quantity of yarn as the primary impediment to the growth of the cotton industry and the forces of supply and demand signalling the need for economic change. These ideas were easily assimilated into the Smithian political economy which came to dominate the economic thinking of the time.

⁴⁹ John Kennedy, “Observations,” in *Miscellaneous Papers*, pp. 6-8.

The problems of quality and competition with Indian goods, which required not free trade but protection, fit less comfortably with the Smithian approach.

The adoption of a Smithian framework to understand the rise of the cotton industry went along with the growing acceptance in Lancashire of the free trade prescriptions of Smithian political economy. For much of the final quarter of the eighteenth century, the cotton men of Lancashire were unreceptive to the arguments for free trade. Instead, they favoured protection from imports of Indian cloth. In the 1770s, for example, Richard Arkwright challenged the 6 d. tax per piece on cloth made purely from cotton, which gave domestic manufactures an advantage over Indian calicoes, but he did not demand its repeal altogether. Instead, he demanded that the cloth he manufactured be classified as fustian, which was subject to a lower tax of 3 d. per piece. In other words, Arkwright left unchallenged the protection that British manufacturers received from Indian imports. Additional evidence for the anti-free trade stance comes from a pamphleteer, who in 1785 argued: “An alleviation of duties on India muslins and callicos, or giving encouragement to them by laying a heavier tax upon the cotton goods of this county, especially upon the infant manufacturer of muslins and fine calicos, must depress and discourage the industry.”⁵⁰ In the late 1780s, the muslin manufacturers of Britain organized themselves into an association to agitate for tariffs on Indian muslins on the grounds that the recently established British muslin industry was “in the greatest danger of being lost to the country” because of unfair competition.⁵¹

⁵⁰ John Wright, M.D., *An Address to the Members of Both Houses of Parliament on the Late Tax Laid on Fustian and Other Cotton Goods* (Warrington, 1785), pp. 9-10.

⁵¹ Minutes of a General Meeting of the Cotton-Spinners, and Manufacturers . . . residing in Glasgow, Paisley, and the neighbourhood, Glasgow, 13 February 1788, PRO, BT/6/140, f. 36.

By the end of the century, cotton manufacturers had begun to reverse their position and became proponents of unrestricted trade in cotton yarn and cloth. As the cotton industry grew rapidly in the 1780s and 1790s, it was faced with excess supplies of yarn, which found ready markets in Europe. Representatives of weaving and knitting interests, fearing shortages of material, argued for the prohibition of yarn exports, and failing that, heavy duties on yarn that was sent out of the country.⁵² Spinning masters in Lancashire appealed to “wisdom of the Legislature [to] not sanction a proposal so directly hostile to the interests of the country, to the freedom of trade and the rights of private property.”⁵³

In 1812, debate raged on the renewal of the East India Company’s charter and its monopoly on trade with Asia. Lancashire cotton interests opposed renewal on the grounds that access to the large and potentially very lucrative markets of India and China should be unrestricted. George Lee of Manchester, for instance, wrote to a committee that was organizing against the renewal of the Company’s charter that “the general arguments against Monopoly are so obvious, and have been so perspicuously treated by various eminent theoretical writers . . . that it becomes principally important to us to state . . . the evidence of our claims to unfettered Trade to India.”⁵⁴

Therefore, when the first histories of the cotton manufacture began to be produced, commencing with John Kennedy’s address to the Literary and

⁵² Letter from Samuel Turner, Secretary of the Provincial Chamber at Nottingham to John Kearsley, Chairman of the Fustian Manufactures Committee, Manchester, Nottingham, 5 March 1787, British Library, Add Ms 38376, f. 19.

⁵³ *At a Special Meeting of Merchants, Manufacturers, and Cotton Spinners, held at Spencer’s Tavern in Manchester, on Friday, 2d day of May, 1800*, British Library, Shelf Mark 937.g.14.

⁵⁴ Letter to the Committee at Manchester, meeting to oppose the exclusive Trade of the East India Company, Manchester, 15 April 1812, Bolton Central Library, ZCR/19/5.

Philosophical Society of Manchester in 1815, the cotton masters of Manchester and its environs were acquainted with the theoretical statements in defence of freedom of trade. And they had been converted into ardent defenders of the market and its powers to produce efficient outcomes. And the rise and progress of the cotton industry began to be increasingly interpreted in these terms.

Conclusion

The adoption of a Smithian framework for interpreting innovation in the early British cotton industry contributed in two ways to the production of Euro-centric histories. First, the economy of Europe came to be divorced from the extra-European connections that shaped commercial and productive activities. Europe from the sixteenth century was embedded in a complex global economy and Europeans engaged in a vast network of trading relations in which it they were not always the dominant partner. This was especially true of its relations with Asia, where Europe was no match for the productive power of the Indian and Chinese economies. This gave rise to a powerful drive to emulate Asian goods, most critically the cotton textiles of the Indian subcontinent. A Smithian framework narrows the focus to the national scale and dispenses with the powerful pressures to emulate and imitate that Europeans felt from the sixteenth century and which were major factors propelling economic and technological change in the eighteenth century. A second way in which a Smithian framework produces Euro-centric histories is the more familiar denial of the applicability of such theoretical models to areas outside Europe. For Smith, the commercial society he described and analyzed was not found in Asia or Africa. Similarly, for Marx, an inheritor of the mode of thinking inaugurated by Smith, capitalism is

uniquely European. Therefore, the entry of Smithian ideas into the writing of history introduced two very profound distortions into that enterprise.