

Working Papers of the Global Economic History Network (GEHN)  
No. 22/06

## **East and West: Textiles and Fashion in Eurasia in the Early Modern Period**

Beverly Lemire  
&  
Giorgio Riello

© Beverly Lemire & Giorgio Riello  
Department of Economic History  
London School of Economics

April 2006

# 千年之求索

For more information about the participants and activities of GEHN, go to <http://www.lse.ac.uk/collections/economicHistory/GEHN/Default.htm>

Department of Economic History  
London School of Economics  
Houghton Street  
London, WC2A 2AE

Tel: +44 (0) 20 7955 7860  
Fax: +44 (0) 20 7955 7730

# East and West: Textiles and Fashion in Eurasia in the Early Modern Period

*Beverly Lemire & Giorgio Riello*

## Summary

What is the origin and essence of fashion? This question has engaged scholars of various disciplines over the past decades, most of whom approach this subject with a Western or European focus. This paper argues instead that Asia was also pivotal in the articulation of the fashion system in Europe. The long interaction between these regions of the world initiated profound changes that included the iteration of the early modern fashion system. Silk and later printed cotton textiles are uniquely important in world history as agents of new consumer tastes, and the embodiment of fashion in Europe. Particular attention is given to the process of the Europeanization of Asian textiles, and the consideration of the intellectual, commercial and aesthetic relationship between Europe and Asia, as the European printed industry developed. Fashion was not just created through the adoption and use of Asian goods, but it was also shaped by a culture in which print was central; and it was the printing of information – visual, as well as literate – along with printing as a productive process, which produced a type of fashionability that could be ‘read’.

## Introduction

Fashion underpinned the commercial growth and cultural transformation of western society.<sup>1</sup> From at least the sixteenth century, fashion’s demotic stimuli unleashed desires across European social ranks. From its early starts fashion was not just a folly, but integral to the expression of consumer preference, the structuring of markets and the reordering of society. Its development and articulation regularized and routinized consumer expenditure, practices critical to the advance of western economies. Thus, economic and cultural realms converge. The

---

<sup>1</sup> C.A. Foley, ‘Fashion’, *Economic Journal*, 3–11 (1893), p. 460.

most prominent theorists of fashion's evolution claim it is an exclusively western development, western in origins, in its evolution, a phenomenon that 'took hold in the modern West and nowhere else.'<sup>2</sup> Certainly, fashion in the West developed through a combination of influences, but these include factors extrinsic, as well as intrinsic, to Europe. Fashion, as a vital motivation of ephemeral wants, was culturally formed and chronologically discrete, with practices distinct to a culture and to a time period, shaped in ways that have yet to be fully unravelled.

This paper is part of a broad revisionist project in global history, placing the European experience within a wider time frame and recognizing the chain of international interactions that produced western consumer society.<sup>3</sup> To this end we examine the genesis of fashion in Europe through one of the most revolutionary commodities to appear in western markets, painted and printed Indian cotton textiles. This commodity represents one of the most important Asian imports into Europe, a product widely consumed and ultimately a source of inspiration for European manufacturers. To understand the genesis of fashion in this period we must, therefore, recognize the significance of Asia in the culture and economy of Europe.

The printed cottons that flowed into Europe after 1500 strengthened an impetus to the spread of fashion in that region of the world, while transforming its design idioms. Europe in this era lagged behind Asian centres of manufacture and commerce and the continent looked East for various commodities including textiles.<sup>4</sup> From the early

---

<sup>2</sup> G. Lipovetsky, *The Empire of Fashion: Dressing Modern Democracy*, trans. by C. Porter (Princeton, 1994), p. 15. Fernand Braudel, for instance, contrasted European fashion with Chinese, but also Ottoman and Arab sartorial immobility. F. Braudel, *Capitalism and Material Life, 1400-1800*, trans. by M. Kochen (London, 1973).

<sup>3</sup> K. Pomeranz, *The Great Divergence: China, Europe, and the Making of the Modern World Economy* (Princeton, 2000), p. 157.

<sup>4</sup> For a discussion of the interactions between an advanced Asia and a backward Europe see: L. Shaffer, 'Southernization', *Journal of World History*, 5 – 1 (1994), pp. 1-22. See also M. Berg, 'Manufacturing the Orient. Asian commodities and European

sixteenth century, as the surge of imports increased, Europe struggled to respond to the forces unleashed by this commodity. The brilliance and fastness of colour and the striking designs of imported Asian textiles attracted generations of European consumers. Thus, Europe had an incentive to learn the 'secrets' of calico printing in Asia (especially those of India and Turkey) in order to substitute home-produced goods for imported commodities. Cotton textiles went beyond conspicuous consumption and created a collective phenomenon which later historians and theoreticians have called fashion. But this process was not just an extension of trade, a passive adoption or diffusion of products, modes and manners. Europeans also shaped their own desires by engaging in the production of 'exotic' commodities to feed expressed material demand. This was a motor of European development in the early modern period. Our paper concentrates on calico printing on cotton as a means to illuminate a critical disjuncture in European material culture. The rise of the European calico printing industry in the late seventeenth and eighteenth centuries illustrates the importance of this commodity in the evolution of the fashion system. But Europe's debt to Asia began before the cotton trade expanded. It is to this early history that we turn first, examining the links between Asian commodities, sumptuary legislation and the evolution of fashion. Fashion was not just created through the adoption and use of Asian goods; it was also shaped by a culture in which print was central; and it was the printing of information – visual, as well as literate – along with printing as a productive process, that produced a fashionability that could be fully communicated.

---

industry 1500-1800', in S. Cavaciocchi, (ed.), *Prodotti e Tecniche d'Oltremare nelle Economie Europee. Secc. XIII-XVIII. Atti della Ventinovesima Settimana di Studi, 14-19 Aprile 1997* (Florence, 1998), pp. 385-419, and M. Berg, 'Asian luxuries and the making of the European consumer revolution', in M. Berg and E. Eger, (eds.), *Luxury in the Eighteenth Century: Debates, Desires and Delectable Goods* (London, 2003), pp. 228-44.

## Asian Trade and the Evolution of Fashion in Europe

Throughout the later middle ages and the early modern period, commercial networks carrying Asian wares were jealously guarded, the trade goods of Asia sustaining generations of merchants, carriers and retailers. In this context, the Levant was a crucial gateway for Europe. Trade goods were channelled across Eurasia between what has been called an 'archipelago of cities',<sup>5</sup> communities where these commodities were hotly desired. Europe's loose and indirect ties to Asia before 1500 made their merchandise all the more significant and the value and quality of iconic Asian goods, like silk, also made them the focus of legislative and moral prescriptions. Silk, in particular, figured in the early articulations of new styles that flourished and intensified from the twelfth century onwards. Sarah-Grace Heller considers that the detailed descriptions of oriental silks in Crusader literature were devised for an audience attentive to material expressions of style. She argues that this literary focus was contained in a genre read from Northern France to Iberia, which:

suggests that the vernacular public of this time had some consciousness of shopping, which is to say of calculating values in order to make personal purchases, an important clue for the presence of a fashion system because it is part of the act of making a personal choice to reflect individual taste, as opposed to an honorific vestimentary system, for example, where clothing is distributed by authorities to demonstrate status and favour in hierarchy, or in a system where choice is simply not an option.<sup>6</sup>

---

<sup>5</sup> J. Abu-Lughod, *Before European Hegemony: the World System A.D. 1250-1350* (New York, 1989), p. 13. The phrase was coined by Richard Haëpke and also adopted by Fernand Braudel.

<sup>6</sup> S.-G. Heller, 'Fashion in French Crusade Literature: Desiring Infidel Textiles' in D. G. Koslin and J. E. Snyder, (eds.), *Encountering Medieval Textiles and Dress* (New York, 2002) p. 109. For reflections on the expansion of fashions, even through the economic crises of the fourteenth century, see, Lipovetsky, *Empire of Fashion*, pp. 20-21; 38-41.

Literary texts offer a window on the desires of at least the tiny literate segment of society. Appetites heightened in the twelfth century through more intensive contact with the material riches of Ottoman society. Debate continues about the process of evolution of fashions and the ultimate genesis of a ‘fashion system’<sup>7</sup>, however, the importance of Oriental materials in this process is irrefutable.<sup>8</sup> At the same time, the spreading use of silks (Byzantine and Oriental in origin) sparked recurring bouts of legislation aimed at constraining individual consumption. The diffusion of manufactures, like silk, through the commercial cities of Europe brought growing wealth to the first European regions to dominate this commerce — the Italian city states — where we find early evidence of the evolution of fashion. The silk industry first took root in Italy where merchants had long participated in the trade in silken draperies from Byzantine and Islamic territories. They aspired to be part of what Anna Muthesius describes as ‘a silken hierarchy of dress’ across the Mediterranean.<sup>9</sup> Wealth, rather than birth, structured the societies in the most dynamic urban centres in Europe and in response to new articulations of dress and domestic accoutrements came renewed legislative interventions. Catherine Kovesi Killerby observes that ‘sumptuary legislation in Italy was primarily an urban phenomenon.’<sup>10</sup>

---

<sup>7</sup> This paper does not employ Barthes’s semiotic definition of a ‘fashion system’, based as it was in a twentieth century system replete with the imagery and texts of a robust fashion press, functioning in conjunction with production and display. R. Barthes, *The Fashion System*, trans. M. Ward and R. Howard (New York, 1983). In contrast, we intend to identify and analyse the early appearance and function of fashion as a self-perpetuating process which informed the historical dynamic, linking itself with other components of the society and economy. The ‘systemic’ nature of fashion thus rested in its interactive relationship with historical change.

<sup>8</sup> For a different perspective on the genesis of the male fashionable figure see, O. Blanc, ‘From Battlefield to Court: The Invention of Fashion in the Fourteenth Century’ in Koslin and Snyder, (eds.), *Encountering Medieval Textiles*, pp. 157-72, and her *Parades et Parures. L’Invention du Corps de Mode à la Fin du Moyen Âge* (Paris, 1997).

<sup>9</sup> A. Muthesius, ‘Silk in the Medieval World’, in D. Jenkins, (ed.), *The Cambridge History of Western Textiles* (Cambridge, 2003), vol. i, pp. 326, 332-3.

<sup>10</sup> C. Kovesi Killerby, *Sumptuary Law in Italy, 1200-1500* (Oxford, 2002), p. 30.

Thriving city states brought opportunities for middle ranked men and women to construct their own material lives in new forms which produced an imbalance in a symbolic order that for centuries had equated status with appearance.<sup>11</sup> As identities could now be negotiated through changes in clothing, fashion became synonymous with social dynamism and its repression the aim of new regulations.<sup>12</sup>

Sumptuary laws mark societal responses to material changes which were an anathema to those who venerated constancy in form as well as hierarchy. The numbers and frequency of these injunctions rose from the late middle ages, as commerce grew and the impact of the impulse to look fashionable shaped a new type of economic and cultural system. Asia was critical in the process as the source of commercial wealth and as the purveyor of many of the most desirable commodities. Aside from furs and precious metals, several Asian commodities were commonly cited by the authors of sumptuary legislation. Pearls worn in the hair or on clothes produced injunctions in Bologna, Florence and Genoa between 1300 and 1400; and these were among the jewels most commonly brought India. Similar prohibitions were passed in fifteenth-century Nuremburg and later in France.<sup>13</sup> Silks became the most contentious of late medieval and early modern trade goods.<sup>14</sup> They were carried west from China or made in Byzantium, Persia, India or (later) in

---

<sup>11</sup> J. Brotton, *The Renaissance Bazaar from the Silk Road to Michelangelo* (Oxford, 2002), pp. 124-52.

<sup>12</sup> G. Calvi, 'Le Leggi Suntuarie e la Storia Sociale', in M.G. Muzzarelli and A. Campanini, (eds.), *Disciplinare il Lusso. La Legislazione Suntuaria in Italia e in Europa tra Medioevo ed Età Moderna* (Rome, 2003), p. 218; Blanc, 'Battlefield to Court', pp. 158-9.

<sup>13</sup> Kovesi Killerby, *Sumptuary Law in Italy*, pp. 46-7. K. Roberts Greenfield, *Sumptuary Law in Nürnberg: A Study in Paternal Government* (Baltimore, 1918) pp. 118-21. See, for example, *Lettres Patentes de Declaration Du Roy, pour la Reformation du Luxe des Habits & Reglement D'iceux* (Rouen, 1634, reprinted London, 1634) pp. 3-5.

<sup>14</sup> As Negley Harte acutely observes: 'silk did not sleep into the minds of Europeans as easily as it did on their bodies'. Negley B. Harte, 'Silk and Sumptuary Legislation in England, in S. Cavaciocchi, (ed.), *La Seta in Europa, Sec. XIII-XX. Atti della 'Ventiquattresima Settimana di Studi', 4-9 maggio 1992* (Florence, 1993), p. 801.



Italy and had been used to represent secular or spiritual hierarchies for centuries.<sup>15</sup> Whether as drapery for alters, pouches for reliquaries, vestments or formal robes, brocaded and embroidered silks were treasured by bishops and princes, and over the middle ages appetites grew for these distinctive representations of esteem. Despite the occasional censure of worldly clerics (well endowed with silken robes), silk continued its association with Europe's elite.<sup>16</sup> As the volume of silks circulating in Europe grew its consumption spread beyond privileged circles and legal injunctions were introduced to arrest this spread. Regulations attempted to halt the use of these materials in such celebrations as weddings, christenings and funerals. Displays of silks on these occasions, whether as plain cloth, velvet or satin, unadorned or embroidered, were judged equally abhorrent by Milanese and Venetian officials who insisted that no bedclothes, cushions or hangings be made of silken fabrics.<sup>17</sup>

Considerable effort was also being made by Europeans to design and decorate their domestic space in new and stylish ways. These practices were seen to undermine traditional norms and wherever the trade routes carried cargoes of Asian goods official concerns emerged. In Basel, Bern and Zurich citizen were forbidden to own or use christening bedclothes made of silk. New mothers and their female guests were likewise forbidden to wear headdresses or sleeves of satin or silk.<sup>18</sup> Silks

---

<sup>15</sup> Muthesius, 'Silk in the Medieval World', p. 325; S. A. M. Adshead, *Material Culture in Europe and China, 1400-1800* (Basingstoke, 1997), pp. 81-2; D. Koslin, 'Value-Added Stuffs and Shifts in Meaning: An Overview and Case Study of Medieval Textile Paradigms', in Koslin and Snyder, (eds.), *Encountering Medieval Textiles*, pp. 237-40. See also A. P. Novosel'tsev, 'Oriental Silk Trade with Europe in the Middle Ages, in Cavaciocchi, (ed.), *La Seta*, pp. 756-8 and J. Kieniewicz, 'Silk Road, Silk Dress and Silk Way of Life. Between Oriental Trade and Western Culture', in *Ibid.*, pp. 901-8.

<sup>16</sup> Kovesi Killerby, *Sumptuary Law in Italy*, p. 22; L. Zinru, 'Silks and Religions in Eurasia, c. A.D. 600-1200', *Journal of World History*, 6 – 1 (1995), pp. 25-48.

<sup>17</sup> Kovesi Killerby, *Sumptuary Law in Italy*, pp. 38-9.

<sup>18</sup> Kovesi Killerby, *Sumptuary Law in Italy*, p. 39; J. Martin Vincent, *Costume and Conduct in the Laws of Basel, Bern and Zurich 1370-1800* (Baltimore, 1935) p. 21.

from the East brought wealth to merchants and traders and flows of spices, textiles and other Asian wares underpinned a new commercial energy that transformed cities and the bourgeois classes. Long before direct contact were established by sea, the flow of trade spread out from Venice through central Europe, re-orienting customs and trade patterns in cities like Nuremberg.<sup>19</sup> Over time, the target of the censors focussed more intensively on clothing. Alan Hunt noted that in ‘the fifteenth century economic and cultural priority had shifted to Italy where sartorial attention focused on the silks and brocades coming from the Eastern Mediterranean and beyond.’<sup>20</sup> Women’s clothing elicited the greatest volume of legislation in Italy; there and elsewhere in Europe, bourgeois women and men challenged the status quo of dress and claimed personal rights to which authorities were everywhere reluctant to accede.<sup>21</sup> Nevertheless, by the fifteenth century in Nuremberg, respectable burgers’ wives were permitted to wear bands of silk on their cloaks, collars and sleeves to a prescribed depth, after officials had failed to enforce earlier bans.<sup>22</sup> Even with this specific concession, officials remained concerned about the diffusion of silks through regional markets and the social disturbance it might evoke.<sup>23</sup> After 1501, when direct sea-going traffic expanded between Europe and Asia, European governments and societies struggled to accommodate conflicting pressures: to preserve the existing hierarchies and to contain the tensions unleashed by the social and economic change. All the while, the shifting aesthetics of fashion produced more and more fancies to enrage beleaguered authorities. The

---

<sup>19</sup> Greenfield, *Sumptuary Law in Nürnberg*, p. 48.

<sup>20</sup> A. Hunt, *Governance of the Consuming Passions: A History of Sumptuary Law* (Basingstoke, 1996) p. 46.

<sup>21</sup> Kovesi Killerby, *Sumptuary Law in Italy*, pp. 30, 38-39; Hunt, *Governance of the Consuming Passions*, pp. 29-33, 47; H. Freudenberger, ‘Fashion, Sumptuary Laws, and Business’, *Business History Review*, 37 - 1/2 (1963), p. 38.

<sup>22</sup> Greenfield, *Sumptuary Law in Nürnberg*, pp. 111, 116.

<sup>23</sup> F.E. Baldwin, *Sumptuary Legislation and Personal Regulation in England* (Baltimore, 1926) pp. 157-64.

reiteration and reissue of sumptuary regulation reflects the failures of governments to enforce restraint in order to preserve the monopoly of fashion by elites alone.<sup>24</sup>

One of the principal sources of this new wealth was the trade in Oriental commodities and, to a considerable extent, the most politically contested commodities in European societies were those goods imbued with an exotic allure; the sensuous sheen and drape of the silk cloth and the sparkle of silk ribbons were an affront to traditionalist who were willing to see these fabrics draped on cathedral alters or forming cardinals' robes but were offended to see them on the backs of burgers and their wives. The essence of fashion is its process of self-definition and adherence to change, which was exemplified in the reception of Asian textiles through the late medieval and early modern periods.<sup>25</sup> Cardinal Francesco Gonzaga's inventory, for example, listed 'turkish style' clothing, crimson and green 'moorish' damasks, several kinds of velvets and silks and cushions of brocade 'from Alexandria'.<sup>26</sup> The substance, design and colour of these goods were likewise a source of inspiration for men and women able to buy them and also for others eager to copy. In 1433, residents of Siena were limited by city ordinance to one pair of silk sleeves, but five years later a local silk industry was launched aiming to provide as much silk as the local citizenry required. By the sixteenth century, silk thread and cloth was being produced in several Italian cities (Florence, Lucca and Venice), and in a number of Spanish towns for local and European markets.<sup>27</sup>

---

<sup>24</sup> Lipovetsky, *Empire of Fashion*, p. 30.

<sup>25</sup> Lipovetsky, *Empire of Fashion*.

<sup>26</sup> L. Jardine, *Worldly Goods: A New History of the Renaissance* (Basingstoke, 1996), p. 69.

<sup>27</sup> L. Molà, *The Silk Industry of Renaissance Venice* (Baltimore, 2000); F. Battistini, *L'Industria della Seta in Italia nell'Età Moderna* (Bologna, 2003), pp. 1-19; Muthesius, 'Silk in the Medieval World'.

Asia's influence on the genesis of fashion in Europe was wide-ranging, accelerating commerce, functioning as an economic driver; moreover, the material substance of this trade acted within social and cultural realms, as a stimulus of desires. More extensive sumptuary laws were enacted with greater frequency from the fifteenth century onwards, directed specifically at dress.<sup>28</sup> In the 1488 Zurich ordinance, the restraint of silk was the authorities' organizing precept, the material being banned on 'coats, shoes, neckcloths, and such like, unless they belonged to the aristocratic gilds'. Legislative enactment persisted through much of Europe inspired by both political and religious mores. Church courts in Switzerland, for example continued with this agenda into the eighteenth century.<sup>29</sup> In 1684 Scottish women were chided for ignoring previous bans on 'Flour'd, Strip'd, Figur'd Chequered, printed or painted Silk Stuff ... [and they] presum'd to go abroad with Cloathes made of the said prohibited Stuffs.'<sup>30</sup>

Overall, the trade in Asian silks had profound affects on European markets and culture. The purpose of this introduction has been to underline the importance of Asian silks as a precursor to Indian cottons and to illustrate the three-pronged reception in Europe to this fibre. First, as trade volumes grew, silks became significant markers of the culture of fashion spreading among ever-wider groups and types of people. Second, this commodity sparked recurrent legalisation attempting to preserve societal morals and the status quo.<sup>31</sup> Such enactments failed to restrain, rather stimulated imitation and innovation.<sup>32</sup> Silk, initially the stuff

---

<sup>28</sup> Kovesi Killerby, *Sumptuary Law in Italy*, p. 38; Vincent, *Costume and Conduct*, pp. 44-48, 211-216; Baldwin, *Sumptuary Legislation*, pp. 35-93.

<sup>29</sup> Vincent, *Costume and Conduct*, pp. 45 and 125.

<sup>30</sup> *A Proclamation, Anent the Sumptuary Act, 1684* (Edinburgh, 1684).

<sup>31</sup> See, for example, the various attempts in Tudor England that had little success. *The Brief Content of Certayne Actes of Parliament against the Inordinate Use of Apparell* (London, 1559).

<sup>32</sup> On the imitation of design see A. Geijer, *A History of Textile Art* (London, 1979), pp. 141-55.

of cardinals and kings, became available to the wives and daughters of sugar-bakers, sausage-makers and their ilk.<sup>33</sup> In 1503, according to one disgruntled Bern chronicler, silks could even be found on the backs of peasants.<sup>34</sup> It is within the context of the long-term influence of Asian commodities that we will consider painted and printed Indian cottons. Their histories are both alike and distinct: both brought extraordinary profits to traders, inspired legislative interventions and launched European industries. However, printed cottons illuminate even more directly connections between Asian textiles and the development of fashion that spanned social ranks.

### **Europe and Printed Indian Cottons**

Cotton textiles were virtually unknown in most of Europe in the late fifteenth century.<sup>35</sup> The exception was in the Mediterranean regions, most particularly the eastern Mediterranean, where the trade in Indian printed and painted cottons was centuries old. Surviving examples of painted and printed cottons from Old Cairo, carbon dated to the fourteenth century, contain a range of common and medium quality goods that passed

---

<sup>33</sup> Vincent, *Costume and Conduct*, pp. 114-116. See also N. Rothstein, 'Silk in the Early Modern Period, c. 1500-1780', in Jenkins, (ed.), *Cambridge History of Western Textiles*, vol. i, p. 529.

<sup>34</sup> Vincent, *Costume and Conduct*, p. 48.

<sup>35</sup> Europe had developed since the twelfth century a dynamic fustian (mix linen and cotton) industry in Central and North Italy and parts of Spain, and later in the thirteenth century in Southern Germany and Switzerland. However, this production was confined to coarse bleached fabrics. M. Fennell Mazzaoui, 'The Cotton Industry of Northern Italy in the Late Middle Ages: 1150-1450', *Journal of Economic History*, 32 – 1 (1972), pp. 262-286; M. Fennell Mazzaoui, *The Italian Cotton Industry in the Later Middle Ages 1100-1600* (Cambridge, 1981). See also H. Wescher, 'The Beginning of the Cotton Industry in Europe', *Ciba Review*, 64 (1948), pp. 2328-33; H. Wescher, 'Fustian Weaving in South Germany from the Fourteenth to the Sixteenth Century', *Ciba Review*, 64 (1948), pp. 2339-50.

through the region.<sup>36</sup> Unlike silk, these fabrics were produced in the broadest array of qualities and from the outset were directed at a far wider range of consumers. Venetian merchants eyed this trade hungrily and worked to become significant intermediaries in a lucrative traffic with Levant and Mediterranean markets.<sup>37</sup> But with the arrival of the Portuguese in India, in the early sixteenth century, cottons began being shipped by sea to western Europe with gradual, but profound, results.

In Europe, woollens, but also silks and velvets, were patterned on the loom and their design was the product of complex methods of weaving and finishing.<sup>38</sup> Thus the 'fashioning' of textiles in Europe had relied mainly on time-consuming techniques of weaving on the loom and with the needle. In contrast, Indian artisans produced a rainbow of colours, patterns and prints suited to the tastes of discrete markets from Japan to East Africa, Indonesia to Central Asia. Painting and printing were more adaptable, faster and less expensive than weaving design. From their arrival, generations of Europeans identified with the unique qualities of Indian cottons. For example, François Pyrard drew a vivid picture of the products he found in western India, goods traded westward to Europe long before his arrival in Gujarat in the seventeenth century:

---

<sup>36</sup> R. Barnes, 'Indian Trade Cloth in Egypt: the Newberry Collection', in *Textiles in Trade* (Washington, 1990), pp. 178-91; R. Barnes, *Indian Block-Printed Textiles in Egypt. The Newberry Collection in the Ashmolean Museum, Oxford* (Oxford, 1997).

<sup>37</sup> Abu-Lughod, *Before European Hegemony*, pp. 239-41; E. Ashtor, 'The Venetian Cotton Trade in the Later Middle Ages', *Studi Medievali*, 17 – 3 (1976), pp. 675-715; E. Ashtor, *Studies on the Levantine Trade in the Middle Ages*, (London, 1978).

<sup>38</sup> A.K. Longfield, 'History of the Irish linen and cotton printing industry in the 18<sup>th</sup> century', *Journal of Royal Society of Antiquaries of Ireland*, 58 (1937), p. 26. The earliest reference to textile block printing is the Italian *Trattato della Pittura* written 1437 by Cennino Cennini and published only in 1821. See D. King, 'Textiles and the origin of printing in Europe', *Pantheon*, 20 (1962), p. 29. Tax records and artefacts show how block printing was practiced in Augsburg in around 1475. *Ibid.*, pp. 23-30. King observes how artefacts are of limited use in understanding the relevance of textile printing in Europe in the middle ages. A large part of medieval printed textiles are fakes and were acquired by nineteenth-century collectors who ignored their dubious provenance.

the principal riches consist chiefly of silk and cotton stuffs, wherewith everyone from the Cape of Good Hope to China, man and woman, is clothed from head to foot. These stuffs are worked, and the cotton also made into cloths of the whiteness of snow, and very delicate and fine, and is also woven of a medium and of a thicker stoutness for divers uses. Others are bespangled and painted with various figures. The silk-work is the same of all these kinds, the articles imported being pillows, counterpanes, and coverlets, pinked with much neatness, and cleverly worked ... Then there are quilts stuffed with cotton, painted and patterned exceeding prettily.<sup>39</sup>

John Ovington, during his travels to Surat in 1689, noted that 'In some things the artists of India out-do all the ingenuity of Europe, viz., the painting of chintes or calicoes, which in Europe cannot be paralleled, either in their brightness and life of colour or in their continuance upon the cloth'.<sup>40</sup> Europeans were drawn to the brilliant colours of Indian cottons and the precision of their designs, elements unmatched in any fabric they knew.<sup>41</sup> Within several years of Portugal's first voyages to the East, printed Indian cottons were being incorporated into clerical garb in Lisbon, while less high quality goods were directed to Atlantic and Levantine markets.<sup>42</sup> Moreover, they then rapidly moved north along well-established commercial routes, through Antwerp's markets, appearing in

---

<sup>39</sup> *The Voyage of François Pyrard of Laval to the East Indies, the Maldives, the Moluccas and Brazil, translated into English from the Third French Edition of 1619*, ed. by A. Gray (London, 1888), vol. ii, part i., p. 246.

<sup>40</sup> J. Ovington, *A Voyage to Surat in the Year 1689*, ed. by HG. Rawlingson (London, 1929), p. 167.

<sup>41</sup> See for instance the description by Bernier of the palampores of the King of Aurangzeb representing large vases of flowers. F. Bernier, *Travels in the Mogul Empire A.D. 1656-1668* (London, 1916). See also: G.P. Baker, *Calico Printing and Painting in the East Indies in the XVIIth and XVIIIth Centuries* (London, 1921), p. 6; M. Bellezza Rosina, 'Tra Oriente e Occidente', in M. Cataldi Gallo, (ed.), *I Mezzari: Tra Oriente e Occidente* (Genoa, 1988), pp. 15-17.

<sup>42</sup> J.C. Boyajian, *Portuguese Trade in Asia under the Hapsburgs, 1580-1640* (Baltimore, 1993) p. 141; J. Guy, *Woven Cargos: Indian Textiles in the East* (London, 1998), p. 9.

southern England in the first half of the sixteenth century, valued for reasons of aesthetics and practicality.<sup>43</sup>

Maxine Berg, in her studies of the import of 'exotic' products from India, China and Japan in the seventeenth and eighteenth centuries, noticed a European drive towards imitation of imported commodities. The goods themselves with their visual and tactile attributes drew European consumers and that in turn produced attempts to substitute European-made alternatives. Many of the commodities initially imported from the East were eventually produced at home, partially re-interpreted to suit European tastes and expectations, but rarely relied on the original technologies used to produce them in the East.<sup>44</sup> Whilst Europeans were keen to 'appropriate' Asia's products, they were unable to acquire the technologies and practical expertise associated with them. Thus the first efforts to adapt Indian floral and botanic motifs took different forms — embroidered botanic forms, based on Asian motifs became staples of late sixteenth and seventeenth-century tapestry needlework.<sup>45</sup> At the same time, European artisans recognized the deficiency in their skills and struggled to replicate the textiles that were increasingly in demand.

The fashion for Indian textiles arose at a time of material and cultural flux in Europe and they appealed at many levels. The fabrics

---

<sup>43</sup> See, for example, T. Beaumont James, *The Port Book of Southampton 1509-10* (Southampton, 1990), vol. ii, pp. 279-81, for commentaries on cargoes. E. Roberts and K. Parker, (eds.), *Southampton Probate Inventories, 1497-1575* (Southampton, 1992), vol. i., pp 65-70; 150-2; 159-62; 165-7; vol. ii, pp 244-52; 346-7; 358-9; B. Lemire, 'Domesticating the Exotic: Floral Culture and the East India Calico Trade with England, c. 1600-1800', *Textile: The Journal of Cloth and Culture*, 1 - 1 (2003), pp. 67-8.

<sup>44</sup> Berg, 'In Pursuit of Luxury', pp. 116, 123. See also J. Styles, 'Product Innovation in Early Modern London', *Past and Present*, 168 (2000), pp. 124-69. A.P. Wadsworth and Julia de Lacy Mann, observed that if 'the first thought of European manufacturers had been prohibition, the second was imitation'. *The Cotton Trade and Industrial Lancashire* (Manchester, 1931) p. 118.

<sup>45</sup> T. Hughes, *English Domestic Needlework, 1660-1860* (London, 1961), p. 34; Dilys E. Blum, *The Fine Art of Textiles: The Collections of the Philadelphia Museum of Art* (Philadelphia, 1997) p. 56, Image 95, 1996-107-3, late seventeenth-century English embroidered beg hanging. Similar examples can be found in the Victoria & Albert Museum.



offered abundant visual references to botanic themes during an era of intense preoccupation with flora. They arrived in a wide range of qualities, including cheap, light cottons suited to shirts and handkerchiefs and more refined draperies suitable for hangings and apparel. Acquisition of cottons represented comparatively modest outlays, compared to silks or even to fine linen. Indeed, the nature of the commodity itself sparked desires and encouraged fashion-consciousness down the social scale. Lipovetsky offers a critique of Gabriel de Tarde's assessment of 'the age of fashion' refuting Tarde's claims for the centrality of new foreign materials in this phenomenon. Local preconditions were doubtless important in the advent and articulation of the European fashion system; but there can surely be no doubt that 'the prestige of [the] foreign' figured centrally in this history.<sup>46</sup> Indeed, Georg Simmel theorized that the fashion phenomenon was only to be found in what he termed 'higher civilizations', where the 'foreignness' of objects added to their attraction, rather than detracting.<sup>47</sup> Calicoes and chintzes provided features unmatched in other fabrics, with colours, motifs and practicality that inspired. Whether in cushions, kerchiefs, bed quilts or curtains, by the seventeenth century tastes for this product were well established, growing larger with sustained marketing by trading companies. Decorative household textiles were an important early market niche for Indian cottons, latter matched by fabrics for apparel. By 1684, for example, the English East India Company's import of textiles averaged between 60-70 per cent of its total trade and amounted to more than one million pieces.<sup>48</sup> The fashion contagion presented the

---

<sup>46</sup> Lipovetsky, *Empire of Fashion*, p. 20.

<sup>47</sup> Georg Simmel, "Fashion" *International Quarterly* 10, (1904), p. 136.

<sup>48</sup> K.N. Chaudhuri, *The Trading World of Asia and the English East India Company* (Cambridge, 1978), pp. 96-7, 282. Aiolfi also provides a division into categories of imported cottons. S. Aiolfi, *Calicos und gedrucktes Zeug: die Entwicklung der englischen Textilveredelung und der Tuchhandel der East India Company, 1650-1750* (Stuttgart, 1987). Similarly, in the second half of the seventeenth century, the Dutch VOC (Verenigde Oost-Indische Compagnie) imported into Europe on average 200,000 pieces of cotton textiles a year. However, cottons accounted for only one-third of the

contentious prospect of a society remade, reordered, reformed. Even as Asia was characterized by some European writers as an unchanging 'other'<sup>49</sup> (the antithesis of fashion), imports from that region and the swelling appetite for Asian-style garb reshaped Europe.

By the late seventeenth century, Europe's governments awoke to the threats posed by the mass importation of cottons: the disruption of local textile industries and the social confusions encouraged by this fashion. Injunctions and prohibitions followed, a re-articulation of sumptuary legislation begun centuries before, but now with a more protectionist than social bent.<sup>50</sup> The history of the calico craze is well known.<sup>51</sup> Faced with the passion for calicoes so widely entrenched, Europe's artisans wanted to copy what they saw flooding into shops and markets. Yet, despite the continuing influx of Indian cottons, before the third quarter of the seventeenth century knowledge of Indian techniques remained partial and sporadic. Limited direct observation and uncertain engagement with technical texts explains much of this deficit. References

---

Dutch company's imports. See in particular F.S. Gaastra, 'The Textile Trade of the VOC: The Dutch Response to the English Challenge', *South Asia*, 19 (1996), pp. 85-95 and M. Morineau, 'The Indian Challenge: Seventeenth to Eighteenth Centuries', in S. Chaudhuri and M. Morineau, (eds.), *Merchants, Companies and Trade: Europe and Asia in the Early Modern Era* (Cambridge, 1999), pp. 243-75

<sup>49</sup> J. Elsner and J.-P. Rubiés, 'Introduction', in J. Elsner and J.-P. Rubiés, (eds.), *Voyages and Visions: Towards a Cultural History of Travel* (London, 1999), p. 50.

<sup>50</sup> N.B. Harte, 'The Rise of Protection and the English Linen Trade, 1690-1790', in N.B. Harte and K.G. Ponting, eds., *Textile History and Economic History* (Manchester, 1973), and specifically on the banning of calicoes N. Rothstein, 'The Calico Campaign of 1719-1721', *East London Papers*, 7 (1964), pp. 3-21. See also T. Keirn, 'Parliament, Legislation and the Regulation of English Textile Industries, 1689-1714', in L. Davidson, T. Hitchcock, T. Keirn and R.D. Shoemakers, (eds.), *Stilling the Grumbling Hive: The Response to Social and Economic Problems in England, 1689-1750* (Stroud, 1992), pp. 1-24; R.L. Sickinger, 'Regulation or Ruination: Parliament's Consistent Pattern of Mercantilist Regulation of the English Textile Trade, 1660-1800', *Parliamentary History*, 19 – 2 (2000), pp. 211-32; P.K. O'Brien, T. Griffith, and P. Hunt, 'Political Components of the Industrial Revolution: English Cotton Textile Industry, 1660-1774', *Economic History Review*, 44 – 3 (1991), pp. 395-423. For France see: C. Woolsey Cole, *French Mercantilism, 1683-1700* (New York, 1943).

<sup>51</sup> See, for example, N. Rothstein, 'The Calico Campaign of 1719-21', *East London Journal*, 7 (1964), pp. 3-21; A.W. Douglas, 'Cotton Textiles in England: the East India Company's Attempts to Exploit Developments in Fashion 1660-1721', *Journal of British Studies*, 8 – 2 (1969), pp. 28-43.

by the Portuguese Duarte Barbosa in the early sixteenth century and of the Frenchman François Bernier who travelled to India in 1665 were important conduits of information.<sup>52</sup> However by the 1670s the quantities of Asian textiles shipped to Europe had become so substantial that drastic measures to defend the interests of European manufactures were advocated. The urgent need for Europe to produce textiles that could rival the colours and designs of their Asian competitors was also apparent. If Asian imports provided the initial incentive for product innovation and import substitution, it was also clear that European knowledge of dyes and textiles printing was insufficient to produce immediate results.

Among Europe's businessmen there was however an equally deep-seated determination to match or exceed Indian artisans in decorative skills – skills which, once mastered, could be applied to plain imported cottons or locally-made linens. Close, routine consultation between the East India companies and their factors in India attempted to ensure that the imported textiles met local standards and tastes. However, European entrepreneurs could see the benefits of developing a printing industry more responsive to local fashion cycles, working within shorter timeframes. In sum, after Indian cottons had launched a more broadly democratic pattern of consumption with a malleable commodity suited to elite and plebeian tastes,<sup>53</sup> European entrepreneurs soon sought to transplant printing, the most fashionable dimension, to European workshops; and that promised a more intensive, vibrant relationship between customer and producer, and a new articulation of the fashion dynamic.

---

<sup>52</sup> Barbosa spent sixteen years in India working for the Portuguese government. His *EI Livro* is an important testimony of the structure of trade and the relationship between Muslin merchants and Portuguese traders. See also R. Pfister, 'The Indian Art of Calico Printing in the Middle Ages: Characteristics and Influences', *Indian Art ad Letters*, 13 (1939), p. 24.

<sup>53</sup> B. Lemire, *Fashion's Favourite: the Cotton Trade and the Consumer in Britain, 1660-1800* (Oxford, 1991), chapter 1.

## The Birth of Calico Printing in Europe

Whilst Europeans had acquired substantial knowledge of textile dyeing (in particular animal fibres) in the Middle Ages, they knew little about the printing of textiles. Woollens, but also silks and velvets were patterned on the loom and their designs were the result of complex methods of weaving and finishing. From the later middle ages rudimentary engraved wooden blocks were used to print simple designs on linens and woollens, but this specialised industry never expanded beyond the Rhenish provinces of Germany. Nor was it able to upgrade its production to high-quality printed textiles.<sup>54</sup> By contrast Asia (and India in particular) had developed a variety of processes that can be roughly distinguished into the three broad categories of dyeing, painting and printing. Europe engaged in 'direct' dyeing (dyeing on the yarn or piece) but had little knowledge of 'reserve' dyeing (dyeing with wax in order to create motifs) or dyeing with mordants. Although textile historians believe that most Indian cottons were painted,<sup>55</sup> in some areas such as Musulipatam, Nizampatam, Narasapur, Armagaon and Madras both techniques were in use.<sup>56</sup> In West India and Gujarat most chintzes were printed using wooden blocks and one of the various techniques that included direct printing, bleach printing (bleaching the design on an already dyed cloth), 'mordant printing' (printing with mordants and then bleaching the unmordanted areas) or resist printing (printing a viscous substance, followed by dyeing, followed by the cleansing of the substance).

This enormous variety of processes, combined with the local availability of high-quality dyes and the skilled use of mordants made

---

<sup>54</sup> A.K. Longfield, 'History of the Irish Linen and Cotton Printing Industry in the 18<sup>th</sup> Century', *Journal of Royal Society of Antiquaries of Ireland*, 58 (1937), p. 26.

<sup>55</sup> J. Irwin, 'Golconda Cotton Paintings of the Early Seventeenth Century', *Lalika Kala*, 5 (1959), pp. 11-48.

<sup>56</sup> A.I. Tchitcherov, *India: Changing Economic Structure in the Sixteenth to Eighteenth Centuries: Outline History of Crafts and Trade* (New Delhi, 1998), p. 72.

Indian textile production far superior to its European counterpart.<sup>57</sup> In the sixteenth and seventeenth centuries Europeans attempted to emulate Indian patterns by first painting similar motifs on heavy canvas cloths used for inexpensive household decoration.<sup>58</sup> The drive to develop a European textile printing industry was clearly in place by the seventeenth century and in 1619 a certain George Wood was granted a 21-year patent for the printing and staining of linen cloth in England and Wales.<sup>59</sup> However inferior the early copies might be, they reflect determined efforts to try to meet the demand for the extraordinary array of cottons so warmly received by European consumers.

The real take-off in textile printing in Europe seems to have occurred during the last quarter of the seventeenth century. It is a matter of debate where calico printing first appeared. The imitations of *toiles peintes* produced since the 1660s in Marseille and shortly thereafter in Dauphiné, Vivarais, Languedoc, Poitou and Normandy were the result of printing coloured designs by means of wooden blocks, but in all probability these were no different from the medieval non-fast coloured printed textiles produced in Germany.<sup>60</sup> We must underline, however, that the inferior quality of these early European printed cottons, fustians and mix linens had little to do with printing itself or the imitation of the complex and fashionable designs of Indian calicoes. Basically Europeans had to overcome their inability to produce long-lasting colours.<sup>61</sup> High-quality

---

<sup>57</sup> Until the 1960s it was believed that most Indian cotton textile production was painted, whilst the European production was printed. Research by Irwin, Schwarz and Floud has disproved it.

<sup>58</sup> P.C. Floud, 'The Origins of English Calico Printing', *Journal of the Society of Dyers and Colourists*, 76 (1960), p. 275; Lemire, 'Domesticating the Exotic'.

<sup>59</sup> G. Turnbull, *A History of the Calico Printing Industry of Great Britain* (Altrincham, 1947), p. 18.

<sup>60</sup> Woolsey Cole, *French Mercantilism*, p. 165.

<sup>61</sup> O. Raveux, 'Espaces et Technologies dans la France Méridionale d'Ancien Régime: l'Exemple de l'Indiennage Marseillais (1648-1793)', *Annales du Midi*, 116 – 246 (2004), p. 157; and his 'Spaces and Technologies in the Cotton Industry in the Seventeenth and Eighteenth Centuries: The Example of Printed Calicoes in Marseilles', *Textile History*, 36-2 (2005), pp. 131-145.

*petit teints* (colours that faded with light and washing) were produced in Europe; but, until the mid-seventeenth century, European artisans were unable to produce *grand teints* (permanent colours resistant to light and wear).

Although France was the earliest country engaged in textile printing, in the following decades the new 'art' became centred in the Netherlands. Jean Ryhner stated in his 1766 book that the Swiss learned cotton printing from the Dutch. As in the case of Marseille in the 1650s and 1660s, Armenians were also employed in Amsterdam in the 1670s to 'draw and colour or dye all kinds of East Indian cottons, which has never before in this country been practiced'.<sup>62</sup> The Ryhner family itself originated in Holland and moved to Basel only in the late seventeenth century. From Basel, calico printing spread to Mulhouse and Neuchâtel and from there back to France after the lifting of the ban in 1759.<sup>63</sup> In England, William Sherwin of West Ham near London took out a patent in 1676 'for invention of a new and speedy way for producing broad calico, which being the only true way of the East India printing and stayning such kind of goods'.<sup>64</sup> His patent equated quality with the precision of what was the 'original' East India Printing. Fifteen years later after Sherwin's patent expired, several print-works were active in and around London in areas like Bermondsey, Bromley, Lambeth, Old Ford, Poplar, Richmond, and Wapping.<sup>65</sup> Among the owners of such print works were French Huguenots (refugees who had fled France after 1685) who had worked in

---

<sup>62</sup> Cited in E. Homburg, 'From Colour Maker to Chemist: Episodes from the Rise of the Colourist, 1670-1800', in R. Fox and A. Nieto-Galan, (eds.), *Natural Dyestuffs and Industrial Culture in Europe, 1750-1880* (Canton, Mass.: Watson Publishing, 1999), p. 221.

<sup>63</sup> F. Brunello, *L'Arte della Tintura nella Storia dell'Umanità* (Vicenza, 1968), p. 215.

<sup>64</sup> Cited in F.M. Montgomery, *Printed Textiles: English and American cottons and linens, 1700-1850* (New York, 1970), p. 16.

<sup>65</sup> S.D. Chapman, 'David Evans & Co. The Last of the Old London Textile Printers', *Textile History*, 14 – 1 (1983), pp. 31-2; J. Irwin and K.B. Brett, *Origins of Chintz* (London, 1970), pp. 3-5.

similar undertakings in the Netherlands before arriving to London.<sup>66</sup> Peter Floud, who studied the early calico printing businesses around London, concluded that until 1715 the productive methods remained rather primitive and the overall growth of the industry in Britain was confined to a restricted number of establishments on the outskirts of the capital.<sup>67</sup>

Just three generations elapsed from these early starts to the peak of European calico printing. One of the reasons for such dynamism was because the occupation was free from early-modern corporate structures, dominating urban crafts.<sup>68</sup> The trade developed on the outskirts of major urban centres, free for the constraints and hierarchies of urban manufacturing and reliant on foreign skills and entrepreneurship. In many cases the public authorities that granted privileges and exemptions legitimised the peculiar status of the new trade.<sup>69</sup> Small semi-independent cities such as many boroughs in Switzerland or the principalities of Germany provided a receptive institutional context for calico printing as a privileged trade. At the same time, the on-going demand for printed, vibrant, washable textiles remained. Tastes in colour might vary, changes in printed motifs became the norm, but the sustained passion for printed cottons for dress and home décor was unabated throughout the Atlantic world.<sup>70</sup>

In contrast, the late seventeenth and the first half of the eighteenth century saw little progress in calico printing and dyeing for nations like France that had effectively introduced the trade into Europe. The anti-calico legislation and the ban on production, trade and consumption in

---

<sup>66</sup> Robinson, *History of Printed Textiles* (London, 1969), p. 15.

<sup>67</sup> Floud, 'Origins of English Calico Printing', p. 278.

<sup>68</sup> C. Simon, 'Labour Relations at Manufactures in the Eighteenth Century: The Calico Printers in Europe', *International Review of Social History*, 49 (1994), p. 117.

<sup>69</sup> M. Cataldi Gallo, 'Indiane e Mezzari a Genova', in Cataldi Gallo, (ed.), *Mezzari*, p. 25.

<sup>70</sup> Montgomery, *Printed Textiles*; A.F. Kendrick, *English Decorative Fabrics of the Sixteenth to Eighteenth Centuries* (Ibenfield, 1934).

1689 quashed developments in the French cotton industry.<sup>71</sup> France had the potential to become a European leader in cotton textiles well before 1750, both because of its early successful engagement in the technical aspects of calico production, and because of its unchallenged European prominence in fashion and textile design. For the long period of the ban, from 1689 to 1759, production was confined to those cities and small regions outside the direct administration of the central government, such as Marseille. Only later did production spread to centres such as the Arsenal in Paris (1746), Angers (1753), Rouen (1755) and Nantes (1758).<sup>72</sup>

Holland and Switzerland were the two major beneficiaries of the legislation against the import and production of calicoes enacted in most European countries from the late seventeenth through to the eighteenth centuries. It is not surprising that in both countries printing flourished, especially in the production of export goods. Already in 1740 there were more than 100 textile print shops in Holland, 80 of which were in Amsterdam.<sup>73</sup> In the late 1750s the Fabrique-Neuve near Neuchâtel in Switzerland employed more than 300 workers.<sup>74</sup> The development of calico printing in Switzerland was not just the result of a local tradition in fustian and pure-cotton handkerchief production in the northern part of the country, next to South German border. Centres like Neuchâtel sold cottons to consumers in Lorraine, Alsace and Germany. The repeal of

---

<sup>71</sup> Woolsey Cole, *French Mercantilism*, p. 165. See the more recent research by Raveux, 'Espaces et technologies', pp. 155-170; Raveux, 'Débuts de l'indiennage', p. 1-8.

<sup>72</sup> H. Clouzot, *La Manufacture de Jouy et la Toile Imprimée au XVIIIe Siècle* (Paris and Brussels, 1926), pp. 8-9; S. Chassagne, 'Calico Printing in Europe before 1780', in Jenkins, ed., *Cambridge History of Western Textiles*, vol. i, pp. 523-4. For a discussion on the geography of the French calico printing industry in the late eighteenth century see: *Toiles de Nantes des XVIIe et XVIIIe Siècles* (Mulhouse, 1978), pp. 8-9 and Chassagne, *Manufacture de Toiles Imprimées de Tournemine*, pp. 47-51.

<sup>73</sup> G. Verbong, 'The Dutch Calico Printing Industry between 1800 and 1875', in Fox and Nieto-Galan, (eds.), *Natural Dyestuffs*, p. 195.

<sup>74</sup> Homburg, 'From Colour Maker to Chemist', pp. 219-58.



prohibitions in France in 1759 provided a further stimulus to development as the Swiss industry could now, at least in the short term, supply a neighbouring country with an enormous population and relatively limited textile printing capacity.<sup>75</sup>

By the 1760s most European countries (except Britain)<sup>76</sup> had repealed their anti-calico laws thus allowing printing both on cottons and linen on an unprecedented scale. At this date calico printing gave work to more than 12,000 workers in Spain. Barcelona, where Estaban Canals had founded the first print work in 1738, was one of the major centres of production in Europe.<sup>77</sup> Other entrepreneurs were active in more than one centre of production. Rodolphe Wetter, who had set up and 'English blue' calico print shop in Marseille, in 1744 also operated in Antwerp and in Orange where he possessed one of the most celebrated print works in Europe. In 1760 the Swiss Oberkampf opened his business in Jouy, seeing the potential to supply the vast French market through production *in situ*. He was followed a few years later by the opening of another major production centre, that of Robert Peel of Lancashire.<sup>78</sup> Central Europe enjoyed similar developments. The textile printing trade began in Prague from 1767 and twenty years later 12 firms employed more than 1,000 men with 314 printing tables.<sup>79</sup> By the late eighteenth century calico printing had reached enormous size not only in Britain and France, but throughout the rest of Europe. Neuchâtel, for instance, was still one of the

---

<sup>75</sup> P. Caspard, 'Manufacture and Trade in Calico Printing at Neuchâtel: the Example of Cortailod (1752-1854)', *Textile History*, 8 (1977), p. 152.

<sup>76</sup> Unlike in France, however, British printers continued to print on linen, cotton/linen blends and cotton cloth for export, developing a robust trade in spite of the lingering official ban.

<sup>77</sup> R. Chenciner, *Madder Red: A History of Luxury and Trade. Plant Dyes and Pigments in World Commerce and Art* (Richmond, 2000), p. 70. For a comprehensive analysis of calico printing in Barcelona see J.K.J. Thomson, *A Distinctive Industrialisation: Cotton in Barcelona, 1728-1832* (Cambridge, 1992), in particular pp. 50-95.

<sup>78</sup> S.D. Chapman and S. Chassagne, *European Textile Printers in the Eighteenth Century: A Study of Peel and Oberkampf* (London, 1981).

<sup>79</sup> F.W. Carter, 'The cotton printing industry in Prague 1766-1873', *Textile History*, 6 (1975), pp. 132-4, 145.

most dynamic centres of calico printing on the continent. In 1797 it produced a total of 160,000 pieces, more than three times the production of other large calico-printing centres such as Mulhouse, Barcelona, Manchester or Prague.<sup>80</sup>

The spread of these facilities had been dependent on the solution of critical technological problems of printing, problems that Indian artisans had mastered centuries before. The use of mordants, to fix dyes, was one of these difficulties. As noted previously, European expertise in the use of mordants had been previously confined to dyeing, rather than printing. The difficulties in successful printing were not simply due to the different chemical and physical composition of vegetable and animal fibres. Alum and iron mordants could be used for printing only if they were mixed with suitable thickeners to form a viscous substance that did not spread beyond the area to be printed. Once mordants had been printed, the viscous substance had to be removed in order to allow the madder or indigo dyes to fix through a further process of dyeing.<sup>81</sup> The discovery of suitable thickeners was an important factor for the development of calico printing in Europe. It also constituted a departure from Asian methods of production. While India provided invaluable expertise both on mordants and on the process of dyeing, it offered little help with the use of thickeners. There is no contemporary evidence showing any use of thickeners in India calico and chintz production, suggesting they painted on the mordant, rather than printing it. Historians of textiles and science are still debating whether mordant printing was a European invention or if it was adopted in Marseille in the middle of the seventeenth century from the Middle East. What is certain is that mordant printing allowed for a much higher productivity than hand painting. Its adoption throughout Europe from the mid-seventeenth century testifies to the speed with

---

<sup>80</sup> Caspard, 'Manufacture and trade', pp. 150-1.

<sup>81</sup> Floud, 'Origins of English Calico Printing', pp. 278-9.

which new knowledge spread and ready integration of mordants and dyes with time saving productive processes.

### **Fashioning Cottons and the Power of Print**

European producers were setting new standards as they had direct access to consumers and could quickly assess their preferences, however varied.<sup>82</sup> With print works in closer proximity to western markets the yearly and seasonal variations in styles could be captured or encouraged by timely interaction with consumers. In this respect, the East India Company's access to the 'original' product did not necessarily mean a competitive advantage beyond the price differential with European-printed cottons. Once European calico producers perfected their techniques at a sufficient level to satisfy popular markets, the copy could become more appealing than the original. It is in this light that we should read the continuous concern of the East India Companies to supply products that could sell well and swiftly. And their worries were not just about the latest colour or European consumers' preferences for lighter shades. 'The floweres must run through the whole piece from end to end', reported one dispatch from London to India, 'whereas, the Flowers have of late been observed to have been begun at each end of the piece. insomuch that in the middle they have, instead of agreeing, been opposite to one another'.<sup>83</sup> A language of standardisation, precision and exactitude in following specifications was paramount not only in the productive process but also in the final product: '[calicoes] must be either 13 or 15

---

<sup>82</sup> Tradesmen's records are filled with evidence of the various regional preferences of certain markets. After shipping blue and white cotton/linens to the American colonies, for example, Bristol merchants were informed that the blue colour of the patterned fabrics was too light; that in the colonial markets a darker blue was preferred. Lemire, *Fashion's Favourite*, p. 81. See also, Chapman and Chassagne, *European Textile Printers*, p. 82.

<sup>83</sup> Cited in Floud, 'Origins of English calico printing', p. 278.

yards on a fine calico. Half of fine bunches of four colours, viz., the ground work drawing black, filled up with red and peach blossom colour and the twigs or spring green'.<sup>84</sup>

The deep blue indigo-dyed cotton textiles had captivated European merchants and travellers in seventeenth-century India, especially when blended with striking designs in red, green and yellow. These were produced through a resist dyeing process based on the waxing of the areas to remain un-dyed. This labour-intensive procedure allowed artisans to produce mostly 'white on blue' rather than 'blue on white' that would have meant the waxing of most of the cloth.<sup>85</sup> During the last quarter of the seventeenth century Europeans adopted not only the product but also the process of production with waxing and a process of tepid indigo fermentation at 115F (compared to the woad dyeing process at 170F). However, by the early eighteenth century they were already experimenting with improved techniques, unknown in Asia. The most important of these was the use of cold vats (or *cuve à froid*) obtained by dissolving indigo in iron sulphate (couperose). This process, invented in England in 1734, quickly replaced the hot fermentation of indigo that damaged the reserve (those parts that had not to be dyed and were covered in wax). The process allowed not only higher quality, but also saving on fuel.<sup>86</sup>

In addition to important new techniques, Europeans most differentiated themselves from Indian manufacturers in the use of mechanical devices. As already observed, of all the possible ways of 'fashioning' textiles, Europeans had excelled in particular in weaving and embroidery. Their knowledge of dyes was until the late seventeenth century very limited and non-existent for reserve dyeing. Painting, another

---

<sup>84</sup> Cited in Floud, 'Origins of English calico printing', p. 279.

<sup>85</sup> L. Dolza, 'How Did They Know? The Art of Dyeing in Late-Eighteenth-Century Piedmont', in Fox and Nieto-Galan,(eds.), *Natural Dyestuffs*, pp. 139-45.

<sup>86</sup> For a more detailed discussion see: Raveux, 'Espaces et Technologies', pp. 163-4.

major Indian tradition in cotton textiles, was never seen as a possible avenue for Europeans, as it was very labour intensive.<sup>87</sup> Printing was, however, a much simpler activity based on the engraving of a wooden block and the subsequent impression of the colour or mordant on the textile. Multi-coloured calicoes required a process in several stages with subsequent impressions on the same cloth. In order to match different colours with a certain degree of precision, wooden blocks were normally rather small (10 x 5 inches) – thus, a square yard of cotton textile in one colour needed at least 26 impressions.<sup>88</sup> Europe's reliance on printing rather than painting, made it paramount to find a process that was not only faster but that could also produce better-quality textiles. Book printing and engraving had reached new heights in the early eighteenth century and techniques had been perfected to reproduce paintings in the form of etchings and popular prints. The rough and unsophisticated visual appearance of woodcut prints found in seventeenth-century ballads and sonnets, contrast with the polished and accomplished prints of the mid-eighteenth century such as Hogarth's famous series. Printing on textiles underwent a major series of technical changes in the second half of the eighteenth century, all of which were closely tied to the technology and artistic production on paper.<sup>89</sup>

---

<sup>87</sup> The calico printer Ryhiner commented in 1766 that 'because the use of painting instead of printing demands a greater degree of skills and is much slower, which means that even granted all things equal we could never adopt their methods, for we lack skilled craftsmen and could not keep the maintenance costs so low'. Cited in Berg, 'In pursuit of luxury', p. 115.

<sup>88</sup> Robinson, *History of Printed Textiles*, p. 18. Robinson states incorrectly 52 blocks per yard.

<sup>89</sup> Good research on the relationship between printing on paper and printing on cotton has been done in France where in the 1920s and 1930s Henri Clouzot published seminal volumes on both topics. Clouzot, *La Manufacture de Jouy*; H. Clouzot and C. Follot, *Histoire du Papier Peint en France* (Paris, 1935). More recently Josette Brédif has considered the issue of design and artistic production on paper and cotton. J. Brédif, 'Etude des Similitudes de Motifs entre Toiles Imprimées et Papier Peints en France dans la Seconde Moitié du XVIIIe Siècle', in C. Piguier, and N. Froidevaux, (eds.), *Copier – Coller. Papiers Peints du XVIIIe Siècle. Actes du Colloque de Neuchâtel, 8-9 Mars 1996* (Neuchâtel, 1998), pp. 143-54.

The first innovation was the use of copper plates, instead of the traditional wooden blocks, first devised by Francis Nixon of Drumcondra near Dublin in 1754.<sup>90</sup> The use of copper plates was not just a process innovation. Its main aim was to improve the quality of the product. It allowed the precise replication on textiles of complex designs and, more commonly, of scenes from fables, representations of the countryside, commemorative battles and the like. The visual 'language' of cotton textiles dramatically changed thanks to the use of copper plates. The process was quickly adopted throughout Europe, first in England, and later in France, Germany and Switzerland (see table 1). Oberkampf was a relatively late comer to the trade, seeing the process of calico printing performed with copper plates in London in 1773 for the first time; yet, in just a few years, he became the best known producer of *toiles* in Europe.<sup>91</sup> As Chapman and Chassagne observe:

Oberkampf's goods acquired a social cachet as his customers were obviously the most distinguished and influential people, notably the Duke of Gontaud (Lauzun) who boasted in the salon of the Duchess of Choiseul in 1776 of having given Oberkampf an oriental design to copy, and that when he succeeded in reproducing it exactly he [the Duke] had pretended the copy was a genuine Indian one and the court believed him.<sup>92</sup>

Successes in technology and in marketing enabled Europe's calico printers to be attentive to the nuances of a fashion system now well out of its infancy, where the variations in taste that arose by region, social rank

---

<sup>90</sup> P.C. Floud, 'The English Contribution to the Development of Copper-Plate Printing', *Journal of the Society of Dyers and Colourists*, 76 (1960), pp. 425-6.

<sup>91</sup> Chassagne, 'Calico printing in Europe', vol. i, p. 520. Oberkampf's brother, however, had seen copper plates in use at Morat, near Neuchâtel in 1770. Floud, 'The English contribution to the development of copper-plate printing', p. 427.

<sup>92</sup> Chapman and Chassagne, *European Textile Printers*, p. 147.

and season were carefully addressed. This became the source of the printers' prosperity.<sup>93</sup>

The second important innovation in cotton printing was the invention of the rotary printing machine patented by the Scot Thomas Bell in 1783. Attempts to perfection a printing machine had started at the very beginning of the century when in Moravia a wooden printing roller was used. In a similar vein, Keen and Platt invented a three-colour roller in 1743.<sup>94</sup> The real leap came, however, only in 1783 when Bell (who worked at Livesey, Hargreaves Hall and Company in Preston) patented a method of printing from engraved cylinders. Two years later he was printing in six colours.<sup>95</sup> Roller printing must have appeared revolutionary compared with Indian painting if we consider that according to Beaulieu it took an Indian craftsman two weeks to paint a calico seven metres long.<sup>96</sup> Potter calculated in 1851 that whilst the average calico print-works could print 6 pieces (equal to 168 yards, at 28 yards a piece) per day, machine printing allowed the printing of from 200 to 500 pieces a day (5,600-14,000 yards), thus permitting an increase in productivity from 30 to 80 times.<sup>97</sup> But the gap between Indian and European production was not just the result of different levels of productivity. Both copper plates and rotary printing made the productive processes extremely capital intensive. European producers could only expect to generate a profit from large runs with the identical designs, as the cutting of a roller probably cost in the region of £7. The high fixed costs were partly covered by the high

---

<sup>93</sup> Chapman and Chassagne, *European Textile Printers*, pp. 78-88.

<sup>94</sup> Floud, 'British calico-printing', p. 4.

<sup>95</sup> Robinson, *History of Printed Textiles*, p. 26. The process was adopted in Alsace and Jouy in 1797, in North America in 1809 and in Barcelona in 1817. G. Pitoiset, *Toiles Imprimées, XVIIIe-XIXe siècles* (Paris, 1982), p. 8 and J.K. Thomson, 'Technology Transfer to the Catalan Cotton Industry: From Calico Printing to the Self-Acting Mule', in D.A. Farnie and D.J. Jeremy, (eds.), *The Fibre that Changed the World: The Cotton Industry in International Perspective, 1600-1990s* (Oxford, 2004), p. 252.

<sup>96</sup> E. Depitre, *La Toile Peinte en France au XVIIe et au XVIIIe siècles: Industries, Commerce, Prohibitions* (Paris, 1912), p. 5.

<sup>97</sup> Robinson, *History of Printed Textiles*, p. 24.

productivity obtained through the use of machines, with a roller about 20 times more productive than a wooden block.<sup>98</sup>

Technical innovation, experimentation and the use of machinery in calico printing can only be understood by considering the rapid but also geographically diversified expansion of this branch of textile manufacturing in Europe. The presence of Armenian, Turkish and Greek workers in Marseille and the increasing knowledge of products and productive methods of India, were accompanied by the willingness to quickly build upon such acquired knowledge. The adoption of non-European techniques was critical, but these too were advanced further as product and process innovation continued towards solutions that could be labour saving. Over time, the exotic motifs of India were re-defined into a staple of European production, patterns 'domesticated'.<sup>99</sup> The cycle of fashion accelerated in the process.

### **Conclusion: Printing Fashion and Printed Fashion**

Printing fashion — on cloth — was a milestone in the development of a responsive, consumer oriented manufacturing sector in Europe. The debt to Asia, to India, was considerable and was rooted in the impact of Asian textiles on the economies, societies and sensibilities of Europeans over centuries. The processes of printing on textiles, as much as the

---

<sup>98</sup> Chapman, 'Quality Versus Quantity', p. 179. Chapman argues that such industrial methods were suitable for the production of lower-quality textiles not only for the relatively large sale of identical design on which they had to rely, but also for the fact that until the 1840s roller printing machines could print only in three colours, against the fifteen colours that could be used in block printing. *Ibid.*, pp. 179-80.

<sup>99</sup> Lemire, 'Domesticating the Exotic'. Jordan Goodman employs the term 'commodity indigenization' to explain a similar process of acceptance and adaptation for consumables like tobacco and caffeinated beverages. J. Goodman, 'Excitantia: Or, how Enlightenment Europe Took to Soft Drugs', in J. Goodman, P.E. Lovejoy and A. Sherratt, eds., *Consuming Habits: Drugs in History and Anthropology* (London, 1995), 126-47. See also, Brian Cowan, *The Social Life of Coffee: The Emergence of the British Coffeeshouse* (New Haven, 2005), chs. 1 and 2.



transmission of design idioms through printing, were profoundly important communicative acts. Over the centuries of trade in printed cottons across Eurasia, when the majority of the world's populations were illiterate, communication took many forms other than through texts. Printed Indian cottons were among the most egalitarian of commodities, in cost, in quality and, following direct trade between Europe and Asia, in availability. The ordering of space, the transmission of botanic imagery, and the varied arrangements of colours represented a rich repository of visual information on the surface of these fabrics.

For millennia, the imagery devised and treasured in one region of the world percolated along trade routes, carrying on a measured visual exchange as peoples responded to the iconographic stimuli and the idioms themselves evolved. Bringing printed cottons to Europe, traders facilitated a new type of visual dialogue involving both the leisured elite and the labouring classes with the Indian producers of printed cloth. Literate Europeans have left a record of the impact of these goods, expressing, as did John Huyghen van Linschoten, their wonder at the 'excellent faire linnen of Cotton made in Negapatan, Saint Thomas, and Masulepatan, of all colours, and woven with divers sorts of loome workes and figures, verie fine and cunningly wrought'.<sup>100</sup> Yet, we have a more difficult task determining the full cultural reception of printed textiles among the mass of Europeans, 'literate' in symbolic and iconographic idioms, but unlettered in the written word. At the same time as books of all sorts were becoming more common, a non-literate print media carried uniquely stylized or densely rich imagery into new markets, to be judged and assessed by a population skilled in visual translation. We know the aggregate outcome of this encounter, even if not the detail responses

---

<sup>100</sup> J.H. van Linschoten, *The Voyage of John Huyghen van Linschoten to the East Indies: from the old English translation of 1598*, edited by A. Coke Burnell, and P.A. Tiele (London, 1885), vol. i, p. 91. By India Linschoten intends Goa and the Malabar coast.

from each community, as peoples from Friesland to Portugal, Prague to Scotland, adopted and interpreted prints from India into their lives, their homes and their apparel.<sup>101</sup>

The use of printing techniques to transmit this visual information enabled replication at an affordable price. Textiles were perhaps the most ubiquitous medium, but prior to the appearance of Indian printed cottons decorative patterning in textiles was the preserve of Europe's wealthiest alone. An aesthetic previously restricted, thereafter gradually became commonplace, absorbed into cultures, modified and reframed within the receiving community. Printing on cotton enabled this significant cultural exchange and printed designs on an affordable medium intensified the fashion ethos among these disparate European populations. Communication in this context shaped the culture of Europe and presented an important new medium through which to transmit image-laden materials to the widest possible audience. Jack Goody observes that:

Culture, after all, is a series of communicative acts, and differences in the mode of communication are often as important as differences in the mode of production, for they involve developments in the storing, analysis, and creation of human knowledge, as well as the relationships between the individuals involved.<sup>102</sup>

Two areas of Eurasia, Western Europe and the Indian subcontinent, possessed substantially different bodies of knowledge in the seventeenth century. What seemed also to be different was how this

---

<sup>101</sup> For examples of the adoption of Indian materials into Netherlands' material culture see: Lotika Varadarajan, *South Indian Traditions of Kalamkari* (Bombay, 1982) pp. 33-34.

<sup>102</sup> J. Goody, *The Domestication of the Savage Mind* (Cambridge, 1977) p. 37.

knowledge was shared, moved, applied, confirmed or disproved.<sup>103</sup> In this process, the discovery and application of new printing techniques was vital to the advance of the European trade. But, printing's role was also multifarious, for printing also played a key role in the diffusion of fashion information in written and visual printed form. By 1600, needlework booklets with printed designs, some showing Asian influence, were being sold in various parts of Europe.<sup>104</sup> Printed paper patterns were followed through the seventeenth and eighteenth century by printed announcements of cargoes, newspaper advertisements of retails stock and seasonal discussions of dress styles, as well as magazines with instructions, patterns and images of new designs.

The circulation of printed information on style was not exclusive to Europe, as Craig Clunas has shown for the late Ming period.<sup>105</sup> However, the capacity to offer seasonal and mid-season novelties in printed fabrics, designed for plebeian and elite buyers, marked a momentous advance for European printers. Alan Hunt defines fashion as 'a process ... in which both producers and consumers place some conscious valuation on change'.<sup>106</sup> Change was a phenomenon known and valued by later eighteenth-century suppliers who brought 'loads of prints on three mornings a week – Tuesday, Thursdays, and Saturdays – from the works. [...] A crowd of drapers was generally waiting for the doors to be opened, when they would rush upstairs to the saleroom, and a scramble for prints would ensue.'<sup>107</sup> Europe excelled through the application of new technologies; but they built their success on the cultural and economic

---

<sup>103</sup> A. Rahman, 'Sixteenth- and Seventeenth-Century Science in India and Some Problems of Comparative Studies', in *Changing Perspective in the History of Science* (Boston, 1973), p. 66.

<sup>104</sup> John Taylor *The Needles Excellency: A New Booke Wherein are divers Admirable Workes wrought with the Needle*. 12th edition. (London 1640). See also Baker, *Calico Printing and Painting*, p. vii.

<sup>105</sup> C. Clunas, *Superfluous Things: Material Culture and Social Status in Early Modern China* (Cambridge, 1991).

<sup>106</sup> Hunt, *Governance of Consuming Passions*, p. 44.

<sup>107</sup> Quoted in Chapman and Chassagne, *European Textile Printers*, p. 85.

structural changes propelled by centuries of imported Asian textiles. Asian fabrics had a profound impact on European design, material culture and production and the changes engendered through these imports included the constancy of change that challenged hierarchy and the profits from change that revised society. The characteristics of materials like Indian cotton established a template for manufactures that would appeal to 'the many poorer sorts' as well as the 'gallants'.<sup>108</sup> The renewal of dress and furnishings, along with the desire for change, stood at the heart of fashion; Indian manufactures sparked the desire and their cottons provided the material to assuage this craving. Europe learned from this example and the fashion dynamic was strengthened as a consequence.

---

<sup>108</sup> J. Cary, *A Discourse Concerning the East-India Trade, Shewing it to be Unprofitable to the Kingdom of England ...*, (London, n. d.), p. 4.

Table 1. Innovations in Calico Printing in Eighteenth- and Early Nineteenth-Century Europe

<b>Copper-plate printing</b>		
	Ireland	1754
	England	1756
	France	1763
	Augsburg	1766
	Barcelona	1770
	Orange	1770
	Colmar	1770
	Mulhouse	1782
<b>Cylinder printing</b>		
	England	1783
	France	1801
	North America	1809
	Barcelona	1817

**Source:** this is based mainly on J.K.J. Thomson, 'Technology transfer to the Catalan cotton industry: from calico printing to the self-acting mule', in D.A. Farnie and D.J. Jeremy, *The Fibre that Changed the World: The Cotton Industry in International Perspective, 1600-1990s* (Oxford, 2004), pp. 250-2. Additional data has been found in F. Little, 'Cotton printing in Ireland in the eighteenth century', *Bulletin of the Needle and Bobbin Club*, 22 (1938), p. 15; P.C. Floud, 'The English contribution to the early history of calico printing', *Journal of the Society of Dyers and Colourists*, 77 (1960), pp. 344-349; P.C. Floud, 'The English contribution to the development of copper-plate printing', *Journal of the Society of Dyers and Colourists*, 76 (1960), pp. 425-34; S. Chassagne, 'Calico printing in Europe before 1780', in D. Jenkins, ed., *The Cambridge History of Western Textiles* (Cambridge, 2003), vol. i, p. 524 ; O. Raveux, 'Espaces et technologies dans la France méridionale d'ancien régime: l'exemple de l'indiennage marseillais (1648-1793)', *Annales du Midi*, 116 – 246 (2004), p. 157.

**LONDON SCHOOL OF ECONOMICS  
DEPARTMENT OF ECONOMIC HISTORY**

**WORKING PAPERS OF THE GLOBAL ECONOMIC HISTORY  
NETWORK (GEHN)**

For further copies of this, and to see other titles in the department's group of working paper series, visit our website at:

<http://www.lse.ac.uk/collections/economichistory/>

**2004**

- 01/04: State-Building, The Original Push For Institutional Changes in Modern China, 1840-1950  
*Kent Deng*
- 02/04: The State and The Industrious Revolution in Tokugawa Japan  
*Kaoru Sugihara*
- 03/04: Markets With, Without, and In Spite of States: West Africa in the Pre-colonial Nineteenth Century  
*Gareth Austin*
- 04/04: The World Coffee Market in the Eighteenth and Nineteenth Centuries, from Colonial to National Regimes  
*Steven Topik*
- 05/04: The Role of the Chinese State in Long-distance Commerce  
*R. Bin Wong*
- 06/04: Imperialism, Globalization, and Public Finance: The Case of Late Qing China  
*Harriet T. Zurndorfer*
- 07/04: Japanese Imperialism in Global Resource History  
*Kaoru Sugihara*
- 08/04: Colonies in a Globalizing Economy 1815-1948  
*Patrick Karl O'Brien*

## 2005

- 09/05 States and Markets in Latin America: The Political Economy of Economic Interventionism  
*Colin M. Lewis*
- 10/05 Global Independence and Economic Backwardness in Latin America  
*Leandro Prados de la Escosura*
- 11/05 “Trust In God – But Tie Your Camel First.” The Economic Organization Of The Trans-Saharan Slave Trade Between The Fourteenth And Nineteenth Centuries  
*Sebastian Prange*
- 12/05 *Wu-Wei* in Europe – A Study of Eurasian Economic Thought  
*Christian Gerlach*
- 13/05 Principal-Agent Problems in the French Slave Trade: The Case of Rochelais *Armateurs* and their Agents, 1763-1792  
*Albane Forestier*
- 14/05 In What Way, and to What Degree, Did the Mughal State Inhibit Smithian Growth in India in the Seventeenth Century?  
*Frank W. Ellis*
- 15/05 Divided Interests, Divided Migrants. The Rationales of Policies Regarding Labour Mobility in Western Europe, c. 1550-1914  
*Anne Winter*
- 16/05 Pre-Modern Economic Growth Revisited: Japan and the West  
*Osamu Saito*

## 2006

- 17/06 Provincializing the First Industrial Revolution  
*Patrick O'Brien*
- 18/06 Shanghai-Based Industrialization in the Early 20<sup>th</sup> Century: A Quantitative and Institutional Analysis  
*Debin Ma*

- 19/06 Imperialism, Globalization, and the Soap/Suds Industry in Republican China (1912-37): The Case of Unilever and the Chinese Consumer  
*Harriet T. Zurndorfer*
- 20/06 Melting Markets: The Rise and Decline of the Anglo-Norwegian Ice Trade, 1850-1920  
*Bodil Bjerkvik Blain*
- 21/06 The Nature and Linkages of China's Tributary System under the Ming and Qing Dynasties  
*Giovanni Andornino*
- 22/06 East and West: Textiles and Fashion in the Early Modern Period  
*Beverly Lemire & Giorgio Riello*