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A Global History of Ottoman Cotton Textiles,
1600-1850

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**EUROPEAN UNIVERSITY INSTITUTE
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Abstract

This paper arises from the project on "Cotton textiles as a global industry, 1200-1800", carried out at the LSE and as part of the Global Economic History Network. The paper revisits and situates the historiography of Ottoman cotton textiles within current debates concerning the emergence of a world economy through the lens of the first global industry, cotton textiles. The period before mechanization saw the expansion of cotton textiles as a commodity partly as a response to European demand and partly as a result of rising world population and its demand for cheaper, more comfortable clothing. The Ottoman Empire and the Ottoman cotton textiles industry is conceptualized as an intermediate space, between Asia and Europe, and the paper, after mapping the cultivation, production and marketing of cotton, focuses in its third part on the transmission of technical knowledge. The finishing of cotton cloth for a long time was one of the weakest points in the history of European technical knowledge (which should be differentiated from science). The cases of knowledge transfer and its dissemination from Asia westwards discussed in the paper force us to rethink teleological narratives of European superiority and economic growth, as well as recognize the capabilities but also limitations of industries such as the Ottoman one in comparison and in connection with other cotton textile industries. The paper contributes to a global economic history of cotton textiles and to polycentric narratives of development within the rising field of Global History.

Keywords

Cotton textiles, Ottoman economy, transfer of technical knowledge, Global History

A Global History of Ottoman Cotton Textiles, 1600-1850

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Introduction

Historians of World and Global history use the Ottoman Empire as a geographical unit of analysis when writing histories of comparisons and connections¹ although they are acutely aware of aggregating diverse regions and economies under a single macro-level. This paper is no exception and, by looking at the history of the Ottoman cotton textile industry, contributes to a better understanding of the Ottoman economy within the ‘world’ economy. The underlying ‘meta-question’ addressed, which leads to a ‘meta-narrative’ of a global history of material progress,² is why textile industries such as the Ottoman and Indian ones did not proceed along a similar trajectory to Europe towards the mechanized production of textiles.³ Europe’s exceptional transition to mechanization can only be satisfactorily understood by considering other regions that did not mechanize until much later.

¹ For a recent example, see, Parker (2006).

² O’Brien (2001).

³ The research for this paper was part of the GEHN project on cotton textiles, <http://www.lse.ac.uk/collections/economicHistory/GEHN/Default.htm>

The Ottoman economy is conceptualized as an intermediate space in Eurasia connecting the threads of an emerging global industry, cotton textiles. The competition, accommodation and above all the connections between the European, Ottoman and Indian cotton textile industries and the impact of European industrialization on the two industries, and employment, (for the pre-colonial period in India and the seventeenth and eighteenth centuries in the Ottoman Empire) need to be examined simultaneously as a conceptual whole. This is the most appropriate framework for analyzing the foundations of a global industry and thus explaining inequalities that have ensued in terms of incomes, living standards and development capabilities.

The paper addresses the issues of when, how and why Europe first acquired and then maintained a clear comparative advantage in the manufacture and export of cotton cloth at the expense of Ottoman textile producers. The decline of the Ottoman textile production coincided with the rapid increase in the production of raw cotton for export to European textile centres. However, while the rise, decline and revival of the Indian textile industry and its role in British industrialization and imperialism have been of perennial interest to British and Indian historians, historians of the Ottoman Empire have not been particularly concerned with the Ottoman textile industry. The paper first engages with and then provides a survey of this historiography of the cotton textile industry. Section Two maps where and when cotton was cultivated, where and how it was manufactured into finished cloth and where it was traded. Three separable cotton cloth markets are discussed in the paper: (i) domestic markets within the Empire, (ii) the State as a major consumer (for army uniforms and sail cloth), (iii) overseas markets for coloured yarns. Regional manufacturing centres are examined by bringing into focus the role of port cities circa 1550-1850. The paper looks at how these raw cotton cultivation and cloth production centres responded to domestic and international demand. A large share of the cotton output (yarn and cloth) left the Empire not only through the ports but also overland from the Balkans towards central Europe; with the products, people, techniques and knowledge travelled as well. The third part of the paper looks at the dissemination of technical knowledge across Eurasia through the transfer of printing and dyeing techniques of cotton textiles in the seventeenth and eighteenth centuries. Historians of Global history usually consider flows of resources as indicators of increasing connectivity between different world-economies. Less considered are migratory movements that promoted trans-cultural exchanges and advanced technical knowledge from one production region to another. Such an analysis requires the use of micro-histories of migrants, artisans and entrepreneurs, in order to grasp (to the extent possible) the dynamics of cultural exchanges of technical knowledge and thus counter-balance the inevitable macro-analysis of global history. This approach allows historians to view the entanglements between multiple economic trajectories such as those of Europe and Asia and thus to avoid the deterministic, eurocentric and teleological view of a *single* economic trajectory, that of the 'West'. At the same time it is a way of approaching the history of the Ottoman cotton textile industry by addressing the multiple challenges that Global history poses to Social history and vice versa.⁴ The last section of the paper examines some evidence that attests to the 'gentle deindustrialization' thesis.

The paper finds that Ottoman producers continued to adapt throughout the period, exploiting occasionally the comparative advantage they enjoyed in parts of the

⁴ Pomeranz (2007).

manufacturing process such as the dyeing of cotton yarn. This however was a highly regional process. What prevented Ottoman textile industries from remaining competitive on the world market was not the level of technical knowledge but institutional constraints on labour and capital markets, the internal problems caused by the 'regionalization' of state authority in the Empire, and the early orientation - since the eighteenth century - of the cotton-producing regions to western manufacturing centres. At the same time, diffusion of technical knowledge westwards advanced significantly the production capabilities of central and western European textile industries that led to technological breakthroughs, which, as it has been argued, lay at the heart of industrialization.⁵

I

There were more people living in the Ottoman Empire in the late sixteenth century than in the end of the eighteenth century; while the population more than doubled in size between the sixteenth and seventeenth century, it would not increase again until the nineteenth century and only in parts of the Empire. Around 1800 the Ottoman population stood somewhere between twenty-five and thirty-two million, with very low life expectancy, around 29 years. At approximately the same period, at the end of the eighteenth century, more than thirty million people lived in the lower Yangzi delta. In the vast Ottoman Empire, stretching from central Europe to Mesopotamia and Egypt in the seventeenth century and not really contracting until the late eighteenth century, land was plenty and labour scarce (with the exception of some Balkan provinces of the Empire); wars and famines frequently disrupted commerce, nevertheless trade was maintained regularly through port cities and caravan routes, of horses in the Balkans and camels in the Anatolian and Arab provinces.⁶

The argument for a prolonged decline of the Ottoman economy is hard to sustain;⁷ Braudel, some time ago, noted the contradiction when he said that the image of prospering cities (especially ports) all over the Empire conveyed by contemporaries was inconsistent with the decline image projected by later historians. Braudel also stressed the confusion that emerged when one related the economic with the political history of the Empire.⁸ On the other hand, Wallersteinian approaches by and large ignore political developments and tend to view the Ottoman Empire as part of a world economy with a centre located in northwestern Europe.⁹ In this analysis, cotton textile production and trade have been "central to an understanding of the Ottoman economy as well as of the dynamics of its integration into the world-capitalist system".¹⁰ In this context the incorporation and 'peripheralization' of the Ottoman Empire in relation to the world economy was exemplified by the decline of the cotton and other early modern textile industries. These views are incompatible with recent, polycentric (or de-centred) views of global history and the world-systems view has been challenged by research that concentrates on adaptation and adjustment to European competition and points to the survival of craftsmen and artisans of the Ottoman Empire. Braudel argued

⁵ Vries (2002: 126).

⁶ Braudel (1984: 469); Quataert (2000: 111); Vries (2002: 85).

⁷ Not only economic but also military decline has been called into question; Grant (1999).

⁸ Braudel (1984: 469)

⁹ For such an approach and the debate on 'peripheralization' and 'incorporation' of the Ottoman Empire to the world economy see, Islamoglu Inan (1987) and Kasaba (1988).

¹⁰ Inalcik, (1986: 374-383).

straightforwardly that decline did not set in until about 1800 and then only in the Balkans, the most dynamic part of the Empire and the one located closer to Europe, while some historians of Ottoman manufacturing have avoided the question of decline altogether.¹¹ These arguments are part of a broader revision of Ottoman history that challenges a view of a decline that supposedly began sometime in the sixteenth century and draws on evidence produced by economic historians on recovery during the seventeenth and again in the eighteenth centuries. Again, the textile industry has served as a prime example of these signs of development in the Ottoman economy.¹²

For some scholars the Empire remained self-sufficient in cotton textiles as late as the 1820s and the decline of handicrafts production under tough competition from machine-made textiles is considered to have taken place well into the nineteenth century.¹³ This is certainly true if we consider the ability of the cotton textile industry to clothe a population of at least twenty million people with domestic textiles, given that the imports of woollen and cotton cloth were destined for the upper end of the market. Ottoman textiles show that the story is also one of response and adjustment to European competition when “new textile styles and fabric mixes appeared in many regions seeking to create niche markets difficult for competitors to penetrate, cheaper labour sources were found (urban based/guild organized, female and child labour). And new technologies appeared”.¹⁴ Pre-factory industries (‘commercial manufactures’) oriented towards regional and international markets for cotton goods developed in parts of the Ottoman Empire from at least the sixteenth century and the Empire remained a vibrant area of trade between India and Europe.¹⁵

The relationship between commerce and government was also peculiar to the Ottoman Empire compared to European states and affected the course of the development of the cotton industry. Three principles characterized the Ottoman Empire: ‘provisionism’, ‘traditionalism’ and ‘fiscalism’.¹⁶ The first two were more directly responsible for the fortunes of the industry. The Ottoman Empire, unlike European mercantilist states, provisioned the capital and the large urban centres with a constant supply of goods, maintaining low prices – and cotton goods were no exception. This was the main priority, and not whether goods were domestically manufactured or imported. Indian cotton goods, particularly muslins sold to the upper end of the market, were imported while cheaper cotton goods were produced for mass domestic consumption.¹⁷ This special approach of openness and non-interference of the Ottoman State to commerce and economy in general has been denounced as a failure to understand the economic problems of the time.¹⁸ More problematic is the lack of any policy to support the production of commodities for export, which was left to subordinate groups (in terms of religion) who organized production and transport through the well-documented diaspora networks that Greeks and Armenians spun. ‘Traditionalism’ is particularly evident in the role of guilds, manned by the janissaries corps, in urban manufacturing centres; the soldiers-cum-artisans and shopkeepers were hostile to any changes that would

¹¹ Quataert (1994: 4).

¹² Faroqhi (1994: 553) and Faroqhi (2006).

¹³ Pamuk (1986: 205-06).

¹⁴ Quataert (2004: 2).

¹⁵ Faroqhi (1979:405-417) and Faroqhi (1980: 61-83); Perlin (1983: 30-95).

¹⁶ Genc (1994).

¹⁷ Inalcik (1986: 374-75).

¹⁸ Vries (2002: 87).

jeopardize their already shrinking incomes due to the successive debasements of the Ottoman currency, and aimed at controlling prices, materials and above all, entry to the guilds. It was this system that in the eighteenth century, at a regional level at least, weakened and allowed the rise of regional manufacturing centres.¹⁹

The Ottoman demand for cotton cloth was mostly satisfied by the domestic industrial sector; the emergence of new centres of production or the unprecedented success of some old ones supports this view.²⁰ In the sixteenth and seventeenth centuries traditional craftsmen moved into product innovation under pressure exerted by the State, the main buyer of luxuries and cotton for sail cloth, and by competition from Italian and Indian fabrics. By the seventeenth century there was a social stratification of cloth in the Empire. Traveller Evliya Celebi mentions that the well-to-do classes in parts of the Empire (other than large urban centres and Istanbul) wore imported woollen cloths, while the lower classes wore clothes made of domestically produced cotton.²¹ The quality of Ottoman cotton products was not as high as that of Indian textiles and demand for high quality fabrics was met mostly by Indian imports. Inalcik has identified the 'excessive' outflow of silver and gold to India from the Ottoman Empire caused by the negative trade balance, basically in cotton.²² Commercial links with markets east of the Empire, in Iraq and Iran, were important and merchants imported ready-made fabrics from Iran but also Diyarbakir, in eastern Anatolia, where imitations of Indian and Iranian goods had been common since the sixteenth century.²³ Ottoman imitations of Indian cotton goods did not reduce imports from India in the seventeenth century and domestic markets continued to be important for local production. This trade was a considerable one and is barely considered in the all-too-common narrative of maritime trade carried out by Europeans from India. By the mid-eighteenth century each caravan ending at Aleppo, Damascus and Smyrna consisted of hundred of camels.²⁴ Even during the Ottoman-Safavid wars of the eighteenth century, textiles from India, Central Asia and Iran continued to supply demand in Istanbul, benefiting especially foreign merchants who were not bound by wartime restrictions on trade with Iran.²⁵ In 1780 a total of five million piastres of cotton goods were imported from the East, 300,000 piastres worth of cotton yarn and 3,300,000 of muslins and other fabrics, a million more than the value of French imports in the same period.²⁶

Overall, cotton textiles were an important domestic as well as export-oriented industry for the Ottoman economy until well into the nineteenth century.²⁷ The import of cotton textiles from India in the seventeenth century and from Western Europe in the nineteenth influenced the course of industrialization in the Empire.²⁸ On the one hand imports from India propelled a vibrant industry of imitations of Indian goods, the know-how of which was gradually transferred to Western Europe; on the other hand imports from Europe gradually eliminated Ottoman yarn and cotton cloth and the Empire became by and large a producer of raw cotton for the rapidly expanding British cotton

¹⁹ Quataert (2000: 137).

²⁰ Inalcik (1993: 273-75).

²¹ Inalcik (1986).

²² Inalcik (1994: 44-45).

²³ Faroqhi (1984: 153).

²⁴ Owen (1977: 135).

²⁵ Murphey (1990: 47).

²⁶ Eldem (1999: 27).

²⁷ Pamuk (1986); Genç (1994); Frangakis-Syrett (1991).

²⁸ Inalcik (1993: 264).

industry. This was however a process that was well under way in the eighteenth century as the steep rise of raw cotton exports demonstrates. By the late eighteenth century the three main producing regions of the Empire, Syria, Anatolia and Macedonia were net exporters of raw cotton, while significant amounts of dyed cotton yarn were exported from Macedonia and especially Thessaly. Imports from India were counterbalanced by exports to Egypt as well as to the northern Black Sea ports, but the industry was not 'a flourishing, dynamic branch of production, vigorously competing in international markets to expand its exports' and can not be compared to India, whose textiles were being kept out of the British market only through protectionist measures.²⁹

During the nineteenth century the import of British-manufactured yarn was greatly facilitated by the 1838 Balta Limanı Treaty, usually presented as a watershed in the Empire's balance of trade and its overall independence that had significant impact on Ottoman manufacturing and marked the increasing British influence in the Ottoman Empire.³⁰ Commercial pressures that gradually eroded the foundations of the Ottoman cotton industry came with the import of British machine-made cotton goods which ultimately replaced both Indian as well as domestic handmade cotton goods. This was not a sudden process and it occurred over three fairly distinct stages. First came competition from English cotton yarn 'crowding out' locally produced yarn for weaving. We do not however know which, when and why Ottoman weavers preferred British over locally spun yarn. Secondly, the Empire switched gradually to cheaper English imitations of Indian goods. Thirdly, and perhaps more decisively for the numerous small producers, came the penetration of the rural inland markets of cheap coarse cotton goods which undermined local production of goods destined for local consumption.³¹ Less discussed is how areas such as Thessaly managed, against the flow, to maintain a competitive position mostly by specializing in producing dyed yarn and to dominate regional markets such as those of Central Europe.³² It was only in the decade 1825-1835 that the impact of British imports on the Ottoman cotton industry became severe and was later aggravated by the aforementioned 1838 Treaty, when low tariffs (5%) on imports flooded the Ottoman Empire with British cotton goods, unsettled the balance maintained until then and eroded the traditional self-sufficiency in cheaper and middle-range cotton goods that the Empire had enjoyed for centuries.³³

These arguments, whether addressing the decline question or not, fall within calls for a much more nuanced and balanced view of the Ottoman Empire in the seventeenth and eighteenth century that would not see the Ottoman economy as a mere extension of the European one but rather as a complex entity with its own dynamics.³⁴ At the same time it is appropriate to acknowledge the historical process of regionalization of the Ottoman Empire in the eighteenth century and the rise of local notables (the age of the *ayans*) and assess its impact on Ottoman production of raw cotton and the manufacture of textiles.

²⁹ Pamuk (1986: 207).

³⁰ Kasaba (1993).

³¹ Inalcik (1986: 375).

³² Issawi (1966: 48-9)

³³ Pamuk (1986: 209).

³⁴ Eldem (2006:283-89).

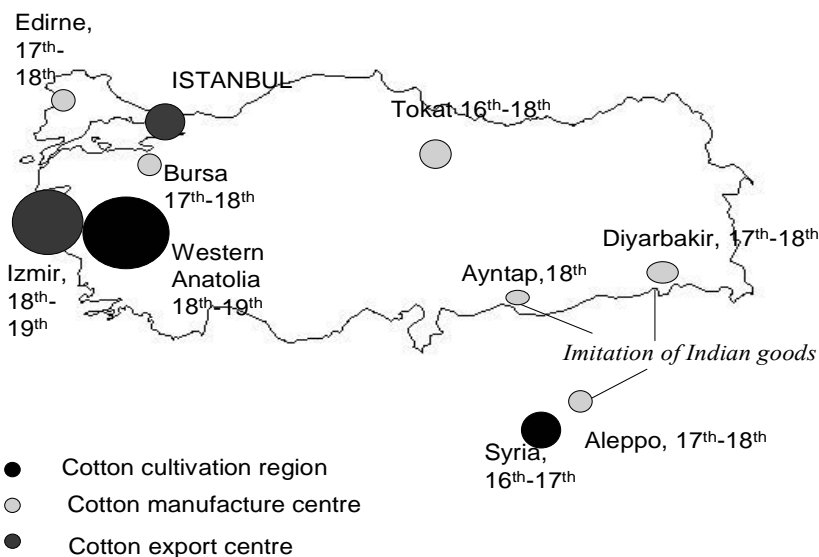
II

The production and distribution of cotton textiles should be considered as a part of the general textile sector since regional production rarely specialized in one type of cloth, although there was specialization in types of garment. In addition to cotton, the textile sector involved silk in Anatolia and wool in Macedonia. The following maps provide a picture of these shifts by identifying the cultivation, manufacture and export regions and centres between the seventeenth and the nineteenth centuries. The first map, reproduced from D. Quataert's book on the Ottoman Empire, shows the major cotton and wool yarn-making locations of the Empire in the nineteenth century; the following two maps break down the Empire into two main regions, the Balkan/Greek peninsula provinces and the Anatolian/Turkish ones and map the production of raw cotton, the manufacture of textiles and the export centres between the 16th and the 19th century.

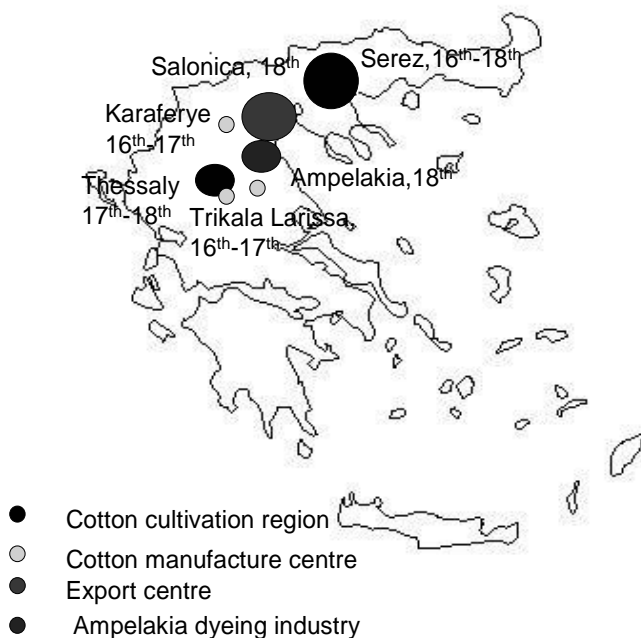
Map 1. Cotton and yarn-making locations in the nineteenth century.



Map 2. The cotton industry in the Asian parts of the Ottoman Empire



Map 3. The cotton industry in the European parts of the Ottoman Empire



Until the end of the seventeenth century the principle centres for cultivation, production and trade in textiles were located in Syria, Anatolia and, to a lesser extent, Egypt. In Anatolia and to some extent Macedonia, local networks of production of two to three towns specialized in spinning, weaving and dyeing of cotton cloth in an operation

managed by merchants with the necessary resources.³⁵ In Salonica, one of the earliest dynamic centres of the woollen industry, Jewish settlers from Spain and Portugal had been developing a particularly strong textile sector since the sixteenth century. Jewish artisans also manufactured textiles in other cities, in Veria (Karaferia), Tricala, Larissa and Edirne.³⁶ The experience of spinners and weavers in these manufacturing centres contributed to the diffusion and specialization in cotton cloth production in the seventeenth and eighteenth centuries. When the Salonica textile industry faced tough competition from English and Venetian woollens in the mid-seventeenth century, some manufacturers left the city despite prohibitions and settled in Smyrna and Manisa in Anatolia, thus diffusing their expertise.³⁷ In north and west Anatolia, weaving remained, with few exceptions (Tokat for instance), a rural activity, organized in the form of the putting out system, with urban guilds playing an unclear role in a “fairly commercialized” system.³⁸ The role of merchants was omnipresent from investing capital to the marketing of goods; the state not only did not discourage merchants, at least in seventeenth-century Anatolia, but protected them by ensuring that their producers met international demand in north Black Sea markets.³⁹ Anatolia continued to be an important producer until at least the first half of the eighteenth century. Cotton weaving remained vibrant in Ankara, Bursa and Tokat but all three regions lost a large share of their revenues (between 60-70 per cent) from produced cloth to other regions, a development that highlights the further regional specialization of the Ottoman cotton textile industry.⁴⁰

From the eighteenth and well into the nineteenth century, cultivation and export of raw cotton and production of yarn became concentrated in the regions and ports of Thessaly and Macedonia in the Balkans and especially western Anatolia. This bifurcation is however a rough approximation since other areas of growing and spinning cotton, such as Egypt, continued to be important. Both these areas, Anatolia and the southern Balkans, involved an extensive network of smaller and larger production centres and ports of export, as well as a division of labour between the lowland urban population specialized in weaving and (in the case of Thessaly) upland rural communities where the spinning of and dyeing of yarn took place.⁴¹ Cotton cultivation, and cotton thread production and trade intensified during the eighteenth century in Macedonia (Drama and Seres). The area was famous for fabrics it had produced since the sixteenth century.⁴² The white shirts and especially cotton bath towels (*pestemal* or *makrama*) were made in Karaferye from cotton brought from the Seres area and were famous in many markets of the Empire. In the late eighteenth-early nineteenth century the sector was still active and textiles were produced from cotton as well as from hemp.⁴³

The export of raw cotton was facilitated by a number of ports – and their growth was partly due to the increased trade in raw cotton. Aleppo, Smyrna and Hormuz all

³⁵ Faroqhi (1994: 39).

³⁶ Kellenbenz (1977: 528-29).

³⁷ Faroqhi (2001).

³⁸ Faroqhi (1986: 270).

³⁹ Faroqhi (1994: 38).

⁴⁰ McGowan (1994: 703).

⁴¹ Petmezas (1990).

⁴² Inalcik (1993: 268).

⁴³ Beaujour, *Voyage*, V. I, p. 73) ; Cousinery, *Voyage* : 69-70) ; Leake, *Travels*, V. 3 : 290-91).

developed in the second half of the sixteenth century and connected Indian, Persian and Ottoman markets. The growth of Hormuz gave rise to the growth of Aleppo.⁴⁴ Its early development was promoted by Venetian trade in the fifteenth century and the trade in Indian cotton textiles in the seventeenth and eighteenth centuries. Aleppo grew during the seventeenth century and became a major Syrian port for international trade when Syria was one of the main cotton-producing regions.⁴⁵ From the eighteenth century Smyrna surpassed Aleppo in terms of the volume of cotton goods and other textiles exported.⁴⁶ French imports, increasingly manufactured woollen cloth, 'paid' for the exports of raw cotton and silk from the port of Smyrna especially and it was the rivalry between English and French commercial interests that significantly benefited the port's trade.⁴⁷

Ottoman cotton fabrics were exported from 1600 onwards to markets in the north and west of the Empire. Ottoman cotton goods were favoured in markets in the Black Sea, Eastern Europe along the Danube and as far north as Poland.⁴⁸ Exports from Smyrna were also destined for Italian ports, primarily Venice, and further distribution to Central Europe.⁴⁹ Markets in Germany were served not only by exports from Smyrna but also by the overland trade routes from Macedonia, where cotton production probably peaked towards the end of the eighteenth century. Products that tended to go by land to the north and west were those that were more valuable by weight than grain. This was mainly cotton, cultivated in Seres, of which one third went by sea and the rest by land. In this period (mid-eighteenth century) raw cotton was exported overland to markets such as Lwow, Leipzig and Vienna, together with semi-finished goods, for example dyed cotton yarn. This trade was facilitated by the commercial networks that were spun between Thessaly and Macedonia and expanded to Central Europe, concentrating on the seasonal Balkan and Central European trade fairs, traditionally more widespread in the European part of the Ottoman Empire than in Anatolia.⁵⁰ Ultimately it was the production and export of dyed yarn to Central Europe (Vienna, Leipzig, Budapest) that became the 'proto-industrialization motor' in the region in terms of capital invested in cloth production.⁵¹

The Ottoman government attempted to affect the textile industry only towards the end of the eighteenth century by prohibiting the import and use of Indian cotton goods to protect local manufactures.⁵² There is no indication that the prohibition stemmed the import of Indian-made fabrics and it was precisely this lack of protectionism, not the lack of skills that hindered the development of the Ottoman textile industry in general and cotton textiles in particular.⁵³ The Ottoman government thus faced a double challenge during this over two hundred year period: it had to protect the domestic manufacturing not only from Indian cotton textiles (by the eighteenth century this was marketed not only to the upper end of the market but also to middle

⁴⁴ Inalcik (1993: 270).

⁴⁵ Masters (1988).

⁴⁶ Inalcik (1993: 274).

⁴⁷ Ülker (1987: 24).

⁴⁸ Inalcik (1993: 269).

⁴⁹ Frangakis-Syrett (1991: 99).

⁵⁰ McGowan (1981: 43).

⁵¹ Petmezas (1991: 589-90).

⁵² Faroqhi (2006: 368).

⁵³ Stoianovich (1960: 257-58).

incomes) but also from the rising yarn imports of British manufacturers during the first half of the nineteenth century.

III

The issue of Ottoman technological ‘backwardness’ in relation to Western Europe has concerned historians particularly with regards to military technology.⁵⁴ There are very few studies that have looked at the development of the textile technology and possible transfers of technical knowledge that might have flowed from the manufacturing centres of the Middle East westwards. Only recently the prominence of Europe in macro inventions and the diffusion of useful technical knowledge have been challenged by using examples of Chinese innovations in spinning and by stressing the exchange of knowledge in dyeing techniques across Eurasia.⁵⁵

Most technological changes introduced in Europe during the medieval period originated from the ‘Orient’; cotton preparation and production of textiles first spread throughout Muslim-ruled southern Europe and the transmission of cotton textile production techniques moved westwards through the Mediterranean.⁵⁶ North Italian production centres in the twelfth and thirteenth centuries specialising on fustians used machinery consisting of a linen warp and cotton weft and comprised an industrial complex characterised by division of labour between spinning, weaving and bleaching in rural centres, while beating, weaving and finishing (dyeing and pressing) was taking place in urban centres. By the fourteenth century high raw cotton costs exposed the region’s comparative disadvantage and the industry declined. The north Italian cotton industry declined because of tough competition in the Levant, and Italian textiles were gradually displaced by cheaper local cotton goods in the sixteenth century.⁵⁷

In the ‘early modern’ period the dependence of the East India Company on Indian workers, not only for weaving but also for finishing (printing and dyeing) is unquestionable and has been heralded as the most important factor for the superiority of Indian cotton goods. English workers were experienced with flax and silk but the same methods were not always applicable to the preparation of cotton for dyeing even when the right ingredients (indigo and madder) were imported.⁵⁸ This lack of knowledge may have fuelled greater experimentation in chemistry aiming to achieve better finishing and was greatly enhanced by the import of technical knowledge from the east. After all, the history of technical dissemination is directly linked to the history of inventions. The example of madder dyeing is indicative; the technique had to be imported several times before artisans in Western Europe learned it confidently and reliably.⁵⁹

In this context, intermediaries, travelling and migrating artisans, were crucial in the dissemination of technical knowledge; the cases of the printers from Anatolia and the dyers/entrepreneurs of Thessaly who settled in Central Europe certainly go against statements that ‘there were hardly any inhabitants of the Ottoman empire trading or working in Europe’.⁶⁰ Ottomans, mostly from the European parts of the Empire, settled in many central and east European markets, forging networks that extended along the

⁵⁴ Lewis (1982: 226).

⁵⁵ Pomeranz (2000: 47-48).

⁵⁶ Mazzaoui (2005: 1).

⁵⁷ Mazzaoui (2005: 2-10).

⁵⁸ Douglas (1969: 37).

⁵⁹ Hilaire-Perez and Verna (2005: 538, 545).

⁶⁰ Vries (2002: 88).

trade fair routes. The same routes were occasionally followed by artisans who carried their techniques with them. Such a technique was dyeing with madder, which was probably re-introduced from Asia to Europe between 1600 and 1800 until it became successful. Europe was as much a pool of technology resources, materials and skills as were Asia and the southeastern part of Europe that belonged to the Ottoman Empire. The overland connections between these regions (Asia and southeastern Ottoman Europe) are in fact most likely to have made the diffusion of technology quicker and more efficient. Dispersal of a technique meant proliferation of varieties used by different artisans in different regions, hence uniformity in technological diffusion is a historical contradiction in terms.⁶¹

In this sense the Mediterranean and the Balkans were the intermediate regions linking the Indian Ocean and subcontinent with European production centres and markets and cannot therefore be considered as areas marginal to the development of a world economy.⁶² Levant and the Mediterranean in general was effectively a breeding, fertile ground for technical skills essential in the European cotton textile proto-industry.⁶³ The transfer of useful and reliable knowledge from the Middle East to southeastern Europe is an example of this connectivity that still remains to be appreciated by narratives of European industrial development. This transfer took place in two ways; the first by the printing techniques transferred to Marseilles and the second through the use of madder-dyeing technique by Armenians and Greeks. Those migrant artisans, after adopting Indian methods for the cultivation and use of madder, successfully transferred them to the West. Armenians in Marseilles developed the manufacture of *chafarcanis*, Indian imitations, and Greeks developed the dyeing with madder technique in Edirne/Adrianople and Ampelakia, in the European parts of the Ottoman Empire. Some of the *chafarcanis* were imports from India by Armenian traders and were renowned for their stark colours, many of them dyed with madder root and alum.⁶⁴ The 'Turkey red' (rouge d'Andrianople) was already famous by the eighteenth century.⁶⁵ The two developments would have to be distinguished though, both in terms of chronology and in terms of technique, albeit within the same framework of dissemination of technical knowledge from East to West across Eurasia.

The process of technique – if not technology – transfer and diffusion followed the caravan route from India to the Ottoman Empire through Iran, before it reached further west to the port of Marseilles and Central Europe. Since the seventeenth century, but particularly in the eighteenth, as Indian cotton goods became more fashionable in the Ottoman empire, at least at the upper end of the market, Ottoman producers started imitating Indian cloth. *Chafarcani* was woven and printed mostly in Diyarbakir, in Kurdistan, close to the old textile-producing centre of Mosul and Iranian textiles centres.⁶⁶ It is most likely that these techniques travelled with Armenian merchants from Iran and specifically New Julfa, the suburb of Isfahan, the main settlement of Armenian merchants and artisans in the early seventeenth century. The town subsequently became one of the main links in the Armenian commercial network.⁶⁷

⁶¹ Hilaire-Perez and Verna (2005: 546).

⁶² Hilaire-Perez and Verna (2005: 555).

⁶³ Raveux (2005: 132)

⁶⁴ Faroqhi (2006 : 369).

⁶⁵ Hilaire-Perez and Verna (2005: 556).

⁶⁶ Revaux (2005).

⁶⁷ McGabe (2005).

Olivier Raveux has shown how the Middle East and the area of Diyarbakir in Kurdistan became a breeding ground for technologies, especially calico printing, which were then exported to Marseilles, by Armenians in a conscious state-planned migration scheme.⁶⁸ The origins of the printing of textile probably goes back to India, mediated by Persian techniques, style and materials, but no Persian block-printed fabric has been found, although it is known that the industry was established by the seventeenth century in Resht, Kashan, and Isfahan. The scarcity of documentation has created confusion and there is considerable uncertainty whether the best fabrics were actually printed or painted.⁶⁹

The story of Diyarbakir Armenian commercial and artisanal networks presents a plausible but nevertheless still unclear example of technology transfer over established commercial routes because in the long term successful mechanization did not ‘take off’ in Marseilles. The case of Ambelakia on the other hand has been called an example of “surviving incorporation into the world economy – at least for a while”.⁷⁰ The example of Ambelakia shows the possibilities and reality of technology transfer from Asia to the European West through South-East Europe and Anatolia. Successive travellers to Ampelakia recorded their impressions, providing an abundance of information on the social organization and the economy of the villages in the area but very little on the technology used. The success the region enjoyed was due to the dyeing of yarn renowned for its fastness and colour: Turkish red. The thread was spun first in what were traditional spinning wheels, imported from India and the Middle East in previous centuries. Spinning was done exclusively by women, while men (but also children) were employed in the process of dyeing the thread.⁷¹

Dyers specialized according to fabric but also according to dye and colour. Each group had its own leaders, membership and regulations. The authority of the organization over its members was complete; they did not allow them to work outside places assigned to them, and in general regulated their activity.⁷² There is evidence that the ways in which crafts organized in guild-like associations were very similar both in the Balkans (*esnaf*) and in Syria (*taifa*). At some stage during the seventeenth and early eighteenth century the guilds system in Thessaly began to be broken by merchants who procured yarn and received the spun and woven cloth from peasants. Production moved from towns to villages; in the late eighteenth century the textile and dyeing urban centre of Tyrnavos near Larissa, was already in decline, to the benefit of upland areas such as Ampelakia.⁷³ This move from urban to rural areas in the European provinces of the Ottoman Empire such as Thessaly distinguishes the development of the textile industry and forces re-consideration of the ‘decline’ picture, limiting it to urban production centres.

The technique of dyeing the yarn with the stark red colour in Thessaly remained a production secret until at least the end of the eighteenth century. Efforts by French and Austrian chemists in factories in Montpellier, Languedoc, Berne, Rouen, Mayenne and Cholet never fully succeeded. The technique probably originated in Bursa and from there spread to Adrianople (Edirne) and the other manufacturing centres of the Empire,

⁶⁸ Raveux (2005).

⁶⁹ Pope (1967: 2155).

⁷⁰ Faroghi (2005: 22).

⁷¹ Baujour ((273)

⁷² Abdul-Karim (1991: 505).

⁷³ Petmezas (1991: 581).

including Ampelakia (see Map 3). Exports of yarn were also important, but not to France because the yarn produced in Macedonia was too coarse to be woven by French machines. Instead it was on high demand in Austria and Germany. The most famous factories for the production of dyed yarn were at Thessaly. Twenty-four workshops spun and dyed 2,500 bales of cotton, nearly all of which was exported to Germany.⁷⁴ In the 1760s, Greeks in Vienna were already importing quantities of ‘cotton wool’, raw cotton, but also of dyed yarn from Thessaly. Merchants came from Western Macedonia, Epirus and Thessaly, where the yarn was dyed. Baujour, at the end of the eighteenth century, wrote that up to 10,000 bales (135,000-145,000 lbs) were dyed annually in Thessaly and sent to Germany, Switzerland, Poland and Russia. Greeks from Thessaly who possessed the secret of the technique⁷⁵ saw the willingness of the Austrian authorities to develop the dyeing technique within the Hapsburg industry and promoted its development.

The particular process and characteristics of the red dyeing techniques were considered to have been particularly hard to achieve and, as a result, to diffuse. The first to invite artisans from the Ottoman Empire, Smyrna or Edirne and observe their techniques were the French in 1747. A combination of advances in chemistry - together with the learning through tacit knowledge from the Greek artisans led to the founding of the first red-dyeing workshop in Rouen in 1750-60. In 1765 the technique was already published in Paris. The cultivation of madder in France by the mid-eighteenth century certainly helped the development of the industry. Conversely, the Austrian authorities’ secrecy policy and the twelve-year limited licence for those wishing to use the technique may have discouraged the artisans considering the risk and inhibited its diffusion in Austria.

Until the early nineteenth century few works were published on the process of dyeing and the intricacies of its technique. Although there had been recipe books written and even published earlier - the earliest published in Lyons in 1766 following the migration of dyers from Edirne, Istanbul and Smyrna and the establishment of a factory there – dissemination of technical knowledge through print was not enough. Because of the delicacy of the process it needed a lot of expertise and climate conditions (air and water) could have significant impact on the success of the dyeing process.⁷⁶ However, French recipes and the accumulating knowledge of chemistry did play a role in the development of a French production of red dye.

In 1757 Panayiotis Vangelinos from Ampelakia went to Vienna, submitted to the Hapsburg authorities a recipe (arcanum) and set up a workshop with exclusive privileges (funding, tax exemption) from the authorities. The secret recipe was kept by the authorities who did not sell it despite several offers; they did however encourage the development of an imperial industry of red dye cotton yarn as well as the cultivation of cotton and madder. Vangelinos’ business worked well but production was low because of lack of availability of raw materials (dyes) and high wages. When his licence expired and the business failed Vangelinos moved in 1766 to Saxony where he attempted to found another ‘proto-fabrik’ with the aid of the authorities. Both enterprises in Vienna and Saxony failed, probably because of bottlenecks in madder, risk-aversion and lack of available capital.

⁷⁴ Svoronos (1956[1996]: 285-7).

⁷⁵ Katsiardi (2003 : 95).

⁷⁶ Chenciner (2000: 188-190).

The example of Vangelinos invites the question of the origins of the entrepreneur. Based on extensive networks of merchants and artisans situated in many important emporia in the Levant and Central Europe, the industry in Ampelakia and Central Thessaly monopolized the trade in dyed cotton yarn in Central Europe for nearly fifty years (1750s-1800s). The industry declined due to internal competition between Vangelinos and his compatriots and also to the import of machine-made yarn from Britain in the nineteenth century.⁷⁷ The Ampelakia industry reached its apogee around the 1780s. Dimitrios Schwarz (so nicknamed because of his business in German-speaking lands), administered its affairs and its capital and provided the link to central European markets. In 1784 Schwarz acquired the right and financial support to open a workshop in Vienna, only to declare bankruptcy in 1788. This probably occurred for two reasons. Schwarz either set up a business rival to his native industry while also trying to apply the putting-out system by working together with thirty weavers in Sternberg in Moravia, or he had the approval of the Ampelakia company and tried to expand the operations of the industry from Thessaly to central Europe. In any case the presence and dominance of the Ampelakia dyed yarn on the Vienna market was established in the 1780s.⁷⁸ What is important is that the Vangelinos 'recipe', submitted a year after it first appeared in the documents in 1757 by Groschel, one of the apprentices of Vangelinos, is the first example of codifying the technique in a detailed way containing designs and instructions. The hesitant and timid response of the Austrian authorities towards the diffusion of the technique could not be more different to the French openness and dissemination of knowledge on dyeing - also combined with advances in chemistry.

In contrast to the failed attempt by Vangelinos in Austria, the Vlachos brothers succeeded in establishing their own *fabrik* in Trieste in 1785; in doing so they diffused the technique to France (Marseilles). They came from Tyrnavos in Thessaly, where they learned the technique from their father; they settled first in Marseilles for nine years and then in Montpellier for five. They were part of the network of Ottoman artisans who transferred the technique to France, where French artisans copied it and spread it further all over southern France. Equally successful were artisans from Smyrna who came to Trieste with capital and managed to establish themselves in the town's industry. The reasons that stifled production in Vienna worked in favour of the Trieste *fabrik* until about 1820: the appropriate climate for drying the yarn after its dyeing; the privileged free port status of the city that allowed the import of raw cotton and madder; its links with markets where Trieste-dyed yarn did not compete with the Ampelakia product.⁷⁹

The 'recipes' recorded in France and Austria do not show any differences except in the sequence of the stages followed for the dyeing of the yarn. The same ingredients were used and the only significant difference seems to be the amount of yarn dyed each batch (in Le Pileur's recipe 100 lbs, in the Vangelinos one 50 lbs).⁸⁰ It is hardly surprising that there are only small differences since both recipes came from the same centres of production in the Ottoman Empire and were transferred with the emigration of artisans. The French economic environment was more conducive to the successful development of the industry and its diffusion from there to Alsace and Silesia than the

⁷⁷ Katsiardi-Hering (2003: 320).

⁷⁸ Katsiardi-Hering (2003: 155,158).

⁷⁹ Katsiardi (2003: 161-2).

⁸⁰ See the contrast between the two 'recipes', Le Pileur's method in Chenciner 2000, 192 and Vangelinos in Katsiardi-Hering (2003: 285-289).

Hapsburg one, whose authorities were often timid in developing an integrated cotton textile industry.

The codification of dyeing techniques and its diffusion or concealment as a state secret – in the French and Hapsburg case respectively – can by no means be taken as a sign of European-only awareness of the significance of the codification process. The India Office Library in London holds an anonymous medical treatise entitled *Nuskha Khulasatul Mejarrebat* (A Treatise of Abstracts of Proven Medicinal Prescriptions), which includes a chapter on dyeing and printing. This work was transcribed in 1766 and almost certainly stems from an earlier date; its style is lucid and suggests the author had a detailed knowledge of the process.⁸¹ The account contains seventy-seven dyeing cotton processes for forty-eight different shades. Apparently the Hindustani dyers produced their dyeing material as well, thus eliminating the need to import dyestuffs, a constant problem for European producers of the textile finishing process until the cultivation (albeit limited) of madder in southern France in the mid-eighteenth century. This provided a significant comparative advantage for Indian dyers; in Thessaly on the contrary dyestuffs had to be imported from madder-growing areas, mostly in Anatolia and some – but not many – regions in the Balkans.

The eighteenth century was the period of the ‘ayans’, local notables who gradually acquired more and more power and built their own armies, funded through local or rather regional taxation that eroded the central administration in Istanbul even further. Such an example is the Ali Pasha of Jannina, who came to control the area of Thessaly; his role, negative or indifferent to the success story of the Ampelakia spinning and dyeing industry has previously been ignored but needs to be taken into account. It was in the context of this de-centralization or regionalization of State authority that the Ampelakia and Thessaly industry developed; the links to central Europe provided the necessary markets while the regional rule of Ali Pasha, extending from Epirus (present-day south Albania) to Thessaly in central Greece, protected the industry of Ampelakia. This protection may have involved high costs but it allowed the region to develop its productive capabilities through the skills of its artisans, the extended use of female labour in spinning and a steady provision of raw materials, that is cotton and madder roots. It was an unusual form of political stability that did not originate from the imperial centre but from the regional autonomy of an Ottoman notable.

IV

In the second half of the nineteenth century, or rather from the 1830s onwards, the decline of the Ottoman textile industry was already under way. The opening up of the Middle East (Ottoman Empire and Iran) by treaties favourable to imports from Europe and the lowering costs of these imports after the advent of the steamboat had a direct and severe impact on the Ottoman textile industry.⁸² Still, this decline was anomalous and diverse, and forces us to reconsider a uniform picture. In Diyarbakir, a town of 30,000 in south east Turkey, there were 1,400 looms in the town in 1863 and 2,710 in the wider district (Diyarbakir Sanjak). In Aleppo, in the early 1850s there were 10,000 looms, which due to tough competition were reduced to 2,800 by 1858, a rapid decrease by any standards; still, the higher prices of British cotton goods during the cotton ‘famine’ of the late 1850s, explains why there were still 5,000 in 1861.⁸³ The town’s

⁸¹ Naqvi (1980: 59).

⁸² Issawi (1980).

⁸³ Platt (1973: 81-83).

industry produced textiles valued at more than £250,000 annually, no small amount. Of this, 6,000 pieces of silk (£9,000), 340,000 pieces of silk and cotton mixture (£136,000), 500,000 pieces of cotton stuffs (£60,000), and 500,000 pieces of “low muslins, for printing on” (£50,000).⁸⁴ British imports a few decades earlier (1830s) amounted to £62,350 value of cotton cloth and £49,000 of cotton yarn.⁸⁵ In Diyarbakir, lastly, the total production of silk and cotton cloth for local consumption and export was valued at £86,000 in 1863, while £75,000 of British cotton goods and yarn was brought and redistributed in the region. The resistance of the Ottoman textile industry was most evident in the coarse quality cloth produced by the cottage industry, where peasants and their families worked. Coarse cotton cloths were woven all over the empire, especially in Anatolia and the Balkans (mostly Macedonia), supplied by cotton grown in these regions but also by British yarn. Bursa, perhaps the location that was hit the hardest by the import of cheap British yarn, seems to be an example of that. Bursa in 1811 had only 1,000 looms and was already depopulating. The price of Indian cotton cloth was already being cut to remain competitive with European and especially British cotton goods which were both driving Indian goods out of the market and Bursa weavers out of business.⁸⁶ About 270,000 lbs of British cotton yarn were imported in the early 1840s to be woven in the cottage industry by women. This covered most of the regional demand, since only 6,000 pieces of British shirting were sold in the Bursa district.

The long decline of Ottoman cotton textiles is confirmed by contemporary accounts. Local and hand-made textiles remained competitive because of superior quality; preference was also given to Indian textiles as late as the 1820s. Turkish artisans in the textile industry were particularly adaptive. Aubin recorded that they were dyeing British yarn and sending it to Russia.⁸⁷ Muslins were particularly preferred for making turbans, head-dresses, veils. British imitations of Indian goods gradually replaced Indian imports to the extent that by the early nineteenth century they were driving Indian goods out of the market or at least were being sold at considerably lower rates. British yarn also replaced Indian and apparently much faster than British-manufactured goods replaced Indian cloth.⁸⁸

The Ottoman Empire's response to the challenge posed by cheaper mechanized imports of yarn and cloth from Britain and Europe was determined by the regional and product diversity of the industry. The Empire seems to have adapted and managed to diversify, occasionally even by substituting cotton with wool, in the case of Bulgaria. The diversification of Bulgaria and the development of the woollen industry, shifting from cotton to wool is an interesting one. If anything, the Ottoman textile sector was a diverse one and involved regional specialization of production according to the availability of raw materials, the market opportunities available and the competitive pressures from Indian and, increasingly, European cotton goods. The textile centres of Macedonia for example specialised in towels and shirts from cotton but also from linen, from hemp flax and cotton grown in the area. Leake, when travelling in the area in the early nineteenth century also found that the production process included the dyeing of cotton yarn and its export to central Europe for further processing and sale. These

⁸⁴ *Skene's report on the Trade of Aleppo for 1861*, PP 1863, LXX, cited in Platt (1973: 83).

⁸⁵ *MacGregor's report on the Commercial Tariffs and Regulations of the Ottoman Empire* (P.P. 1843), cited in Platt (1973: 83).

⁸⁶ Cunningham 22.

⁸⁷ Cunningham 22.

⁸⁸ Cunningham, 68.

centres were among the first to experience the substitution of linen with cotton in the Empire. As prices of the raw material fell and imports rose, the production centres of Karaferya, Edessa and Salonika were producing 574,000 francs worth of cotton towelling, marketed mostly to the Levant. The diversity of these manufacturing centres can be seen by the amounts of wool produced in Salonika, 4.2 million francs of heavy woollen cloth and 1.7 million francs in the adjacent textile centres of Karaferya and Edessa (Vodena). These were exported through the Balkans.⁸⁹ This area is most interesting because it appears to have been a case of a recurrent proto-industrialization succeeded by industrialization. The transition to the mechanized cotton spinning and mechanized textile manufacturing in general is highlighted in the setting up of four cotton mills in the area of central Macedonia and Bulgaria from the 1860s to the 1870s.⁹⁰ The production centres in today's southern Bulgaria indicate the extent to which cotton co-existed with wool as the region diversified in the manufacture of cloth; cotton towelling was prosperous in central Bulgaria up to 1878, producing 200,000-300,000 francs worth a year. Calicos had also been woven and block-printed in the area since the 1820s to the amount of 1.5 million piastres (or 4.5 million livres tournois) in 1864, and that is in just one the amount sold in just one trade fair. The industry declined when woollen cloth manufacture substituted cotton in about 1860 due to the import of calicos.⁹¹ It was in 'Hellenic Macedonia' however, that the production of cotton piece goods persisted and was not substituted by wool at any point.⁹² The trade liberalization reforms ushered in from the 1830s constitute a break in the economic history of the Empire and need to be examined for their impact on the industrial capacity, productive capabilities and path of development, as much as the exogenous impact of European penetration of the Empire with cheap cotton goods.

Conclusions

The particular case of the red-dyed yarn constitutes an interesting point of comparison between Indian and Ottoman techniques and specialization, and the transfer of these techniques to France and Austria. Indigo in India and madder in the Ottoman Empire became sought after by Europeans for the colouring of dyes.⁹³ The French and Hapsburg responses to substituting the large amounts of red cloth imported demonstrate the varied strategies adopted by different European economies in catching up with the comparative advantages in the process of finishing cotton goods enjoyed by producers in economies further East. Transmission of finishing techniques from Asia to Europe was especially important and took place in two ways: through tacit knowledge and the migration of artisans but also through codification of knowledge in the form of 'recipes', guidelines for the precious techniques. In the case of Armenian artisans who migrated to Marseilles and from then to other regional centres in the seventeenth century only tacit knowledge seems to have been at play. In the case of Thessaly artisans, both the transfer of knowledge to central Europe and codified knowledge were

⁸⁹ Palairot (2002: 76).

⁹⁰ Palairot (2002: 77).

⁹¹ Palairot (2002: 69-73).

⁹² Palairot (2002: 358).

⁹³ For the European demand for red cloth, see Giorgio Riello, 'The Rise of European Calico Printing and Dyeing and the Influence of Asia in the Seventeenth and Eighteenth Centuries', unpublished paper.

promoted. The development of techniques however did not lead to full-scale industrialization; they were necessary but not sufficient.

Despite the adaptation and survival of the Ottoman textile industry, the openness of the Ottoman economy throughout its history left domestic textiles facing tough competition; in the absence of mechanization the limits of the Ottoman industry became more and more severe and the comparative advantage in producing raw cotton and materials for dyeing the cloth was lost; when British competition with cheap machine-made yarn and then later in the nineteenth century with the import of cheap cotton cloth became tougher, there was little more than regional niche markets to be maintained such as the finishing of the cloth with an exceptional red colour.

The size, mapping and characteristics of Ottoman cotton textiles for the development of a global industry are important to give us a sense of the Ottoman Empire's place in the eighteenth-century world economy. In the second quarter of the nineteenth century the industry experienced ever intensifying pressures from British-manufactured cloth and yarn. The more recent picture, to which this paper subscribes to, is one of 'gentle de-industrialization'. Competition and state policies between the Ottoman Empire and European powers, most evident in the case of the Balta Limani treaty of 1838 that accelerated the de-industrialization of the Ottoman textiles sector – were extremely significant. Only a regional approach can help us discern the individualities as well as similarities of the Ottoman cotton textiles in relation to other cotton regions around the world. Still, it is the importance of technological breakthroughs for Europe's path of economic development that still awaits explanation. Between 1750 and 1850 probably no part of Asia (and European regions of the Ottoman Empire) experienced such changes in technology and manufacturing.⁹⁴ Creating connexions between regions where knowledge of the textile industry disseminated – importantly from East to West across Eurasia – may partially explain the competitive edge acquired and maintained by Europe over other cotton-producing regions. The question then becomes once again: what allowed Europe, and especially Britain, to attract and exploit the dissemination of useful and reliable knowledge in the manufacturing of cotton textiles. Historians of industrialization however are not back to square one, since arguments nowadays are going around the globe involving India, China and the Ottoman Empire. In this sense the ball is again in the British/European court; but the game is far from over.

⁹⁴ Parthasarathi (2002: 280).

References

- Baghdiantz, McCabe Ian and Harlaftis Gelina and Pepelasis Minoglu Ioanna. *Diaspora Entrepreneurial Networks. Four Centuries of History*, Oxford & New York: Berg, 2005.
- Beaujour, Felix de, *Tableau du commerce de la Grece*, Paris (English translation: *A View of the Commerce of Greece*, London, 1800.
- Braudel Fernand, *Civilization and Capitalism, 15th-18th Century. Vol. 3. The Perspective of the World*, London: Fontana Press, 1984.
- Çızaçka Murat, 'Incorporation of the Middle East into the European world-economy', *Review*, 8, 3, 1985: 353-377.
- Çızaçka Murat, *A Comparative Evolution of Business Partnerships. The Islamic World and Europe, with Specific Reference to the Ottoman Archives*, Leiden: Brill, 1996.
- Chenciner, Robert, *Madder Red: A History of Luxury and Trade. Plant Dyes and Pigments in World Commerce and Art*, Richmond: Curzon, 2000.
- Clarence-Smith William Gervase, 'Locally produced textiles on the Indian Ocean periphery 1500-1800: East Africa, the Middle East and Southeast Asia', Pune GEHN Conference, December 2005.
- Cousinery E.M., *Voyage dans la Macedoine*, Vols 1-2, Paris 1831.
- Cunningham A.B., 'The journal of Christophe Aubin : A report on the Levant trade in 1812', *Archivium Ottomanicum*, 8, 1983 : 5-136.
- Douglas Audrey W., 'Cotton Textiles in England: The East India Company's Attempt to Exploit Developments in Fashion 1660-1721', *The Journal of British Studies*, 8, 2 1969: 28-43.
- Eldem Edhem, *French Trade in Istanbul in the Eighteenth Century*, Leiden: Brill, 1999.
- Faroqhi Suraiya, 'Labor recruitment and Control in the Ottoman Empire', in Quatert Donald (ed), *Manufacturing in the Ottoman Empire and Turkey, 1500-1950*, New York: State University of New York, 1994.
- Faroqhi Suraiya, 'Notes on the production of cotton and cotton cloth in XVIth and XVIIth century Anatolia', *Journal of European Economic History*, 8, 2, 1979: 405-417.
- Faroqhi Suraiya, 'Research on the history of Ottoman consumption: a preliminary exploration of sources and models', in D. Quataert (ed), *Consumption studies and the History of the Ottoman Empire, 1550-1922*, New York: 2000, 15-44.
- Faroqhi Suraiya, 'Textile production in Rumeli and the Arab provinces: geographical distribution and internal trade (1560-1650)', *Osmanli Araştırmaları* 1, 1980: 61-83.
- Faroqhi Suraiya, 'Trade and Revenue Collection in Later Sixteenth-Century Salonica', in K. Fleet (ed), *The Ottomans and the Sea*, special issue of *Oriente Moderno* XX, 1, 2001: 101-112.
- Faroqhi Suraiya, 'Between conflict and accommodation: Guildsmen in Bursa and Istanbul during the 18th century', Epstein, S.R. et al. (eds.) *Guilds, Economy and Society*, B1 Proceedings 12 International Economic History Congress, Madrid, 1998.

- Faroqhi Suraiya, 'Declines and Revivals in Textile Production', in S. Faroqhi (ed), *The Cambridge History of Turkey*, Vol 3, *The Later Ottoman Empire, 1603-1839*, Cambridge: Cambridge University Press, 2006.
- Frangakis-Syrett E., 'The trade of cotton and cloth in Smyrna: from the second half of the eighteenth century to the early nineteenth century' in Çağlar Keyder and Faruk Tabak (eds), *Landholding and Commercial Agriculture in the Middle East*, New York: 1991.
- Frangakis-Syrett E., *The Commerce of Smyrna in the Eighteenth Century, (1700-1820)*, Athens: Centre for Asia Minor Studies, 1992.
- Genç, Mehmet, 'Ottoman industry in the eighteenth century: general framework, characteristics, and main trends' in Donald Quataert (ed), *Manufacturing in the Ottoman Empire and Turkey 1500-1950*, New York: State University of New York, 1994.
- Goffman Daniel, *Izmir and the Levantine World, 1550-1650*, Seattle: University of Washington Press, 1990.
- Grant, Jonathan, 'Rethinking the Ottoman "Decline": Military Technology Diffusion in the Ottoman Empire, Fifteenth to Eighteenth Centuries', *Journal of World History* 10, 1, 1999: 179-201.
- Hilaire-Perez Lilian and Catherine Verna, 'Dissemination of Technical Knowledge in the Middle Ages and the Early Modern Era', *Technology and Culture*, 47, 2006: 536-565.
- Inalcik, Halil, 'The Ottoman State: Economy and Society, 1300-1600' in Halil Inalcik and Donald Quataert (eds.), *An Economic and Social History of the Ottoman Empire, 1300-1914*, 2 vols, Cambridge: Cambridge University Press, 1994.
- Inalcik, Halil, 'When and how British cotton goods invaded the Levant markets', in Huri Islamoğlu-Inan, (ed.), *The Ottoman Empire and the World-Economy*, Cambridge and Paris: Cambridge University Press and Éditions de la Maison des Sciences de l'Homme, 1986.
- Islamoglu-Inan Huri (ed), *The Ottoman Empire and the World-Economy*, Cambridge: Cambridge University Press, 1987.
- Issawi Charles, 'De-industrialization and Re-industrialization in the Middle East since 1800', *International Journal of Middle East Studies*, 12, 1980: 469-479.
- Issawi Charles, *The economic history of the Middle East, 1800-191. A book of readings*, Chicago: University of Chicago Press, 1966.
- Kasaba Reşat, 'Treaties and Friendships: British Imperialism, the Ottoman Empire, and China in the Nineteenth Century', *Journal of World History*, 4, 2, 1993: 215-241.
- Kellenbenz Hermann, 'The Organization of Industrial Production', in E.E. Rich and C.H.Wilson (eds), *The Cambridge Economic History of Europe*, Vol. V, Cambridge: Cambridge University Press, 1977.
- Kostis, Kostas, *Aforia, Akriveia kai Peina. Oi kriseis diatrofis stin elliniki chersoniso (1650-1830)* [Nutrition crises in the Greek Peninsula], Athens: Alexandria, 1993.
- Kurmus Orhan, 'The cotton famine and its effects on the Ottoman Empire' in Huri Islamoğlu-Inan (ed.), *The Ottoman Empire and the World-Economy*, Cambridge: Cambridge University Press, 1987.
- Leake W.M., *Travels in Nothern Greece*, Vols 1-4, London 1835.
- Lewis, Bernard, *The Muslim Discovery of Europe*, New York: W.W. Norton, 1982.

- Masters Bruce, *The Origins of Western Economic Dominance in the Middle East. Mercantilism and the Islamic Economy in Aleppo, 1600-1750*, New York & London: New York University Press, 1988.
- Mazzaoui Maureen Fennell, "[The North Italian Cotton Industry, 1200-1800](http://www.lse.ac.uk/collections/economicHistory/GEHN/GEHNPdf/PADUA/Mazzaoui.pdf)", <http://www.lse.ac.uk/collections/economicHistory/GEHN/GEHNPdf/PADUA/Mazzaoui.pdf>, 2005.
- McNeill William, *The Human Condition: An Ecological and Historical View*, (Princeton, 1980)
- Murphey R., 'Conditions of Trade in the Eastern Mediterranean: An Appraisal of Eighteenth-Century Documents from Aleppo', *Journal of the Economic and Social History of the Orient*, 33, 1990: 35-50.
- Musson A.E. and Eric Robinson, 'Chemical Developments in Dyeing', in *Science and Technology in the Industrial Revolution*, Manchester 1969.
- Naqvi Hamida Khatoun, 'Colour Making and Deying of Cotton Textiles in Medieval Hindustan', *International Journal of Hindu Studies*, 15, 1, 1980: 58-70.
- O'Brien Patrick.K., 'Review Article: Metanarratives in Global Histories of Material Progress', *The International History Review*, 23, 2, 2001: 6345-367.
- Owen Roger, "Introduction to Part II", in Thomas Naff and Roger Owen, *Studies in Eighteenth Century Islamic History*, London and Amsterdam: Carbondale, 1977.
- Palaire Michael, *The Balkan Economies c. 1800-1914. Evolution without development*, Cambridge: Cambridge University Press, 2002.
- Paris, R., *Histoire du Commerce de Marseille*, vol. V: *De 1660 a 1789. Le Levant*, Paris 1957.
- Pamuk Sevket, 'The Decline and Resistance of Ottoman Cotton Textiles, 1820-1913', *Explorations in Economic History*, 23, 2, 1986: 205-225.
- Pamuk Sevket, 'The evolution of fiscal institutions in the Ottoman Empire', paper presented at the XIII International Economic History Congress, Buenos Aires, 2002.
- Parker Charles, '[Paying for the Privilege: The Management of Public Order and Religious Pluralism in Two Early Modern Societies](#)', *Journal of World History* 17, 3, 2006: 267-296.
- Parthasarathi, Prasannan, 'Review article: the great divergence', *Past and Present*, 167, 2002: 275-293.
- Parthasarathi, Prasannan, 'Cotton Textile Exports from the Indian Subcontinent, 1680-1780', <http://www.lse.ac.uk/collections/economicHistory/GEHN/GEHNPdf/PADUAParthasarathi.pdf>, 2005.
- Parthasarathi, Prasannan, *The transition to a colonial economy: weavers, merchants and kings in South India 1720-1800*, Cambridge: Cambridge University Press.
- Perlin F., 'Proto-Industrialization and Pre-Colonial South Asia', *Past and Present*, 98, 1983: 30-95.
- Petmezas Socrates, 'Patterns of proto-industrialization in the Ottoman Empire. The case of Eastern Thessaly (ca 1750-1860)', *The Journal of European Economic History*, 19, 3, 1990: 575-603.
- Pomeranz Kenneth, *The Great Divergence: China, Europe and the Making of the Modern World Economy*, Princeton: Princeton University Press, 2000.
- Pomeranz, Kenneth, 'Social History and World History: From Daily Life to Patterns of Change', *Journal of World History*, 18, 1 2007: 69-98.

- Pope Arthur Upham (ed), *A Survey of Persian Art. From Prehistoric Times to the Present*, Vol. 5, Asia Institute of Pahlavi University, London: Oxford University Press, 1967.
- Rafeq Abdul-Karim, 'Craft Organization, Work Ethics, and Strains of Change in Ottoman Syria', *Journal of the American Oriental Society*, 111, 3, 1991: 495-511.
- Quataert Donald (ed), *Consumption Studies and the History of the Ottoman Empire, 1550-1922. An Introduction*, New York: State University of New York, 2000.
- Quataert Donald, 'Clothing Laws, State and Society in the Ottoman Empire, 1720-1829', *International Journal of Middle East Studies*, 29, 3, 1997: 403-425.
- Quataert Donald (ed), *Manufacturing in the Ottoman Empire and Turkey, 1500-1950*, New York: State University of New York, 1994.
- Rafeq Abdul-Karim, 'Craft Organization, Work Ethics, and Strains of Change in Ottoman Syria', *Journal of the American Oriental Society*, 111, 3, 1991: 495-511.
- Raveux Olivier, '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: 131-145.
- Schumpeter E.B., *English overseas trade statistics, 1697-1808* Oxford, 1960.
- Shah Deepika, *Masters of the Cloth. Indian Textiles Traded to Distant Shores*, TAPI Collection, 2005.
- Stoianovich Traian, 'Esoteriko kai eksoteriko emporio' [Domestic and international trade] in S. Asdrahas (ed.), *Elliniki Oikonomiki Istoría, 15th-19th century*, Vol I, Athens: Politistiko Idryma Omilou Peiraios, 2003.
- Stoianovich Traian, 'The Conquering Balkan Orthodox Merchant', *The Journal of Economic History*, 20, 2, 1960: 234-313.
- Svoronos Nikos, *To Emporio tis Thessalonikis ton 18o aiona*, Athens: Themelio 1996 [1st edition 1956].
- Ülker, Necmi, 'The emergence of Izmir as a Mediterranean Commercial Centre for the French and English interests, 1698-1740', *International Journal of Turkish Studies* 4, 1 1987: 1-38.
- Vries, Pier, 'The Role of the State in the Rise of the West', *Journal of World History* 13, 1 2002: 67-138.