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Chinese, Japanese and European Silk. A comparative approach

It is an unquestionable fact that Asian – and particularly Chinese and Japanese – silk have long been a product that is emblematic of trade relations between Europe and Asia. Extensive historical and economic research has been dedicated to this luxury product which, traded across continents, casts important light on a range of issues: technological advances and their sociological impact, changing tastes and fashions, the production of (and market for) luxury commodities. Though the issue of what defines a product as “luxury” is one that deserves in-depth analysis, which will not be my focus here. Instead, I wish to look at how the silk industry illustrates the continual interplay between a possible ‘centre’ and ‘periphery’ (as theorised, first and foremost, by Fernand Braudel and Immanuel Wallerstein). Involving both the agricultural and manufacturing sectors, the silk industry was obviously

a complex affair, thus any discussion of it requires consideration of institutional structures and the policies adopted in ever-changing international relations. One must, for example, never overlook the fact that the entire cycle of silk production began in fields where the cultivation of mulberry or similar trees was the *sine qua non* for silkworm farming. This inevitably means that one has to look at rural relations of production (both in Asia and Europe), investigating both the institutional framework of agriculture and the forms of domestic production that preceded the emergence of industrial manufacture.

Overall, however, study of Asian silks must be based on a consideration of the relations between East and West in terms of the above-mentioned model of “centre” and “periphery”. In the case of China, this means one must look at the international standing of Chinese culture itself; at the history of a “Middle Kingdom” whose power – it is argued – was from the nineteenth century onwards gradually undermined by the predominance of an economic system that had emerged in Europe. This interpretation of historical events has, as we all know, resulted in a “Eurocentric” vision of history, which in recent years has been the focus of on-going debate (as revealed in book titles containing such phrases as “the Rise of the West”, “Why Europe?” “Re-Orient” or “The Great Divergence”). But setting aside that issue for now, what I wish to focus upon is the standing that Chinese silk managed to maintain in international markets; the fact that this industry exported an original “know-how” which, all

historians agree, was for long unchallenged. Inevitably, the supremacy enjoyed by the Chinese silk industry might be threatened at certain points in its history by nations with which the country had established contacts of various kinds, Europe and Japan. Nevertheless, allowing that much research in this area remains to be done, I would argue that China was a “centre” in a world economy of which the silk industry was an important sector, and that this centre would, from time to time, find itself competing with semi-peripheral or peripheral areas in the production of finished fabrics, yarns or raw silk. Broadly speaking, I will on the one hand look at the role of raw materials (raw silk) in terms of Wallerstein’s “periphery”, applying the notions of “semi periphery” and “centre” respectively to where that material was worked into yarns or fabrics. True, specific skills might exist only in specific sectors, and technological developments had impact upon each of them. However, whilst the emergence of specialisations are important and significant, perhaps undermining clear-cut distinctions between “centre”, “semi periphery” and “periphery”, these concepts still have their value. Look, for example, at a topic to which we will return later: the spinning of yarns in Italy. Such an industry may have had a decisive role in world markets, yet (in the terms of the general theory espoused here) this circumstance meant that the country lost the “centrality” it had previously occupied in other sectors, as textile manufacture.

China's enormous contribution in this sector of manufacturing was unquestionable. The first advances and technological developments in the silk industry had all originated there; then subsequent international competition had resulted in slumps and recoveries, as well as leading to technological transfer of fundamental importance toward west as well east. Arab and Middle Eastern nations had undoubtedly played a key role as go-betweens for knowledge, technologies and textiles that were subsequently replicated in Europe. One tradition, in fact, has it that Arab civilisations advanced right to the heart of Asia after winning the battle of Tares in 751, acquiring knowledge of basic techniques used in the weaving of silk and in the production of other items that were then part of the luxury-goods market.

A matter of major historical relevance here is, therefore, the relation between imports of raw silk from Asian regions and the quantities of finished fabrics that flowed from that continent onto European markets. Clearly, this issue is bound up with that of the relations between the ancient Silk Road that ran across Central Asia and the sea route which, by the Early Modern age, had become important even if not essential for such trade. Now difficult to access, source material relating to the history of various states of Central Asia (for example, Uzbekistan, Kazakhstan and Tajikistan) might well raise questions about the now-prevalent view that the fall of Mongol dominion in the region had produced profound

changes in the trade infrastructures and mechanisms existing in Eurasia, with maritime routes benefitting at the expense of the old caravan routes. At the same time one must also acknowledge that even in the distant past seaborne commerce had existed, and that the comparison between land and maritime trade routes has a long history; as one historian has observed: “despite the battle of Talas , the Arab empire and China did have commercial contacts, mostly through sea routes. Based in ports along the southeast coast of China – Canton, Quanzhou (Zayton), and Yangzhou – Muslim traders (both Arabs and Persians) traded in many areas in China”. Those rich Arab merchants were, it is pointed out, in a position to export *firanb* (Chinese colour silk fabrics), *kimkhaw* (golden brocade) and *zaytuni* (silk yarn named after the port of Zayton). And it was thanks to such Arab – and, subsequently, Byzantine – merchants that the cities of the Mediterranean were able to take advantage of this maritime trade; the obvious case in point is Venice, which would for long be considered the main terminus for silk exports from Asia to Europe.

Therefore we do not deny that, after the fall of Mongol domination and the advent of the great European sea powers, the southern sea route became an important strategic link between the opposite shores of Eurasia, nevertheless more conclusive documentary evidence is required before one can argue that terrestrial trade routes had truly become insignificant.

As Safavid Iran acquired increasing importance – particularly during the course of the seventeenth century – the strategic role of silk within its economy became ever clearer. Shah Abbas, for example, would – near the ancient Isfahan – found the city of New Julfa, which then exercised an almost total monopoly over the export of raw silk; it was here that the Armenians would establish themselves as the dominant group in the trade of a product that was dispatched to all the major markets of Europe. However, as the Safavid dynasty itself went into decline there would be a corresponding fall in the growth of the Persian silk trade. According to some Venetian sources, Persian raw silk was not considered to be of particularly high quality, that from other areas of the Mediterranean being preferred (yet one should also bear in mind that, according to French sources, Chinese spun silk was not suitable for every fabric produced in that country). It is striking is that no mention in the Venetian sources is made of the arrival of Chinese raw silk in Venice, but that can be explained by the circumstance that such merchandise must have been re-exporting northwards from the seventeenth century onwards. Indeed indirect sources do confirm that Chinese raw silk was reaching the Europe market, very probably in large quantities which posed serious competition for Persian silk and thus caused different trend in prices in the different markets.

With Persian silk exports going into irreversible decline – in 1655-1660 the amount imported by the French East India Company fell to around 43,000 lbs per year, decreasing to zero by the 1680s – traditional European imports from China were joined by another source of raw silk: Bengal. Nor should one overlook the fact that Chinese silk exports travelled in another direction: via Manila to Central and Southern American, where the effects of this trade were such that it destroyed the New Spain sericulture already in the first half of the 18th century.

In any case the most recent studies have highlighted the fact that the contrast between land and maritime routes might not have been as sharp as normally assumed. The relations between the maritime and land routes, therefore, should be analysed in greater detail with regard to the quantities transported, rather than presuming the outright victory of one over the other.

2. What is certain is that thanks to these trade rapports and technological transfer from East to West along the centuries - what is essential to any understanding of the relations between the two continents over the centuries - the silk industry had become a crowded sector in Europe from Middle Age onwards. Many areas of production having developed, a wide range of specialised manufactures went together with a clearly-defined division of labour. Italian cities (such as Lucca, Florence, Genova and Venice),

probably profited mostly and quickly developing more advanced capacities both in the spinning and weaving of silks. Subsequently, the fundamental (“central”) position these cities occupied in the international division of labour meant that they could compete at a medium-high level with textiles from Asia itself.

Ultimately, the importation of Chinese fabrics into Europe would become bound up with process of European colonialist expansion, serving to stimulate a key sector of exports within China itself; this was clearly the case with Canton, for example, and the English presence (not to say, predominance) within the city during the eighteenth-nineteenth century. For centuries, luxury imports from Asia would be a decisive feature of trade relations between East and West. Then, as Patrick Verley argues, the Industrial Revolution led to a change in the nature of such imports, the focus shifting to more mass-consumption products, even if silk products themselves retained their high commercial value.

Immediately prior to the full industrialisation of manufacturing processes, and the subsequent international division of labour, within the silk industry the separation of the spinning of yarn and the weaving of textiles was of essential importance; furthermore, technological innovations and improvements meant that the value of silk thread increased. Historians ranging from Carlo Poni and Claudio Zanier to Giovanni Chicco have highlighted how Italian spinning mills – initially those

producing thread *alla bolognese*, then those whose thread was *alla piemontese* – manufactured an Italian speciality that was much sought-after in international markets. Nevertheless, it is true that such spinning mills represent a sort of “semi-peripheralization” of silk production in relation to silk-weaving, the latter undergoing important developments in France from the seventeenth century onwards. Lyons (and, even earlier, Tours) would begin to usurp the central position in the production of luxury silk fabrics - brocades, damasks and satins - which Italy had maintained throughout the sixteenth and for most of the seventeenth century. (As we know, various factors would play a part in this turn of events: the role of Louis XIV’s court at Versailles; the growing demand amongst the nation’s aristocracy; the adoption of a deliberate policy that aimed to make the country entirely independent in the manufacture of silk textiles.)

However, even though England, the Netherlands and various German states also launched their own silk industries, Italian silk manufacture remained a vigorous sector of production in the eighteenth century: not only would it see innovation in types of textiles (in Piedmont, for example, new fabrics were developed, whilst Genoese and Florentine textiles – together with Venetian damask and brocades – remained highly prized) but there were also improvements in the qualities of spun silks. Furthermore, the role of mulberry trees within agriculture was modified, with the proportion of these trees to other

agricultural crops changing substantially within the Po valley: in the course of the eighteenth century, such changes were clearest in the territories of the Venetian Republic, whilst during the nineteenth century they were most sizeable within Lombardy. In effect, when discussing the performance of the silk industry within certain areas of both Europe and Asia, the relation between the Industrial Revolution and the agricultural premises which made it possible is an issue of no small importance.

All this does not deny the fact that, throughout the eighteenth century, China retained a central place in silk production, even more than Japan. As the Jesuit J. B. Du Halde would observe in 1736: “China may be called the country of silk, for it seems to be inexhaustible, supplying several nations in Asia and Europe”.

Indeed already during the seventeenth century imports of raw silk from China had mounted not only in Europe but even in the Japanese archipelago, creating an imbalance of trade that greatly alarmed the Tokugawa Bakufu. This by no accident in 1685 imposed a quota reducing imports to about one-third of the current level. As in Europe and China, despite the official sumptuary regulations against the indiscriminate wearing of silks, the domestic demand for silk in Japan continued to grow, and the weaving industry, centered at Nishijin in Kyoto, needed new sources of raw material. The promotion of sericulture was encouraged by various *han* governments through financial incentives, distribution of

mulberry seeds, silkworm eggs, the publication of sericulture manuals. While there were substantial imports of raw and spun silk from China, from 1680 onwards various regions in Japan began to produce an increasing amount of the cocoons and thread needed to supply the national silk industry. Figures thus show a gradual decline in the amount of raw silk imported from China through the port of Nagasaki, which was the entry port for trade with China (and Holland). However, it has been pointed out that Chinese raw silk did continue to make its way into the country via Korea, in particular through the ports of Tsushima and Satsuma, designated entry-points for Korean imports (these ports came under the administration of the island of Kyushu, which enjoyed a large degree of autonomy within the shogunate). For example, the official figures for Nagasaki indicate that in 1710 only around 5,900 kg of raw silk were imported from China (the annual figure from the period 1680-1690 had been around 23,600 kg), and the decline would continue until the imports ceased altogether in 1770.

It was evident that the increased production of the raw silk was strictly connected in Japan not only with the ceremonial requirements of the imperial court at Kyoto but also by the needs of other consumers in the Japanese complex social hierarchy. In this way, Japanese silk textiles could bear comparison to Chinese and European silk (in many cases, it proved itself to be even more refined). One should not forget that if Edo was becoming the true economic capital of the country, Kyoto continued

to represent a political centre of power of great symbolic – indeed, divine – significance. While other centres of the silk industry almost matched its standing, it is no coincidence that the Nishijin district of Kyoto would become the key centre of silk production – and the manufacturing of kimonos in particular – within Tokugawa Japan. In effect, a large part of the raw and spun silk produced within the rest of the country supplied the Kyoto silk industry.

Two problems nevertheless requires further investigation about China. One concerns what was actually exported from Chinese ports. Was this a growing amount of raw silk alone? I would argue that this became the trend during the seventeenth and eighteenth century, with a constant drop in the volume of finished silk textiles exported, for reasons that I will try to analyse. Nevertheless, during the course of the nineteenth century the Chinese themselves would take advantage of the introduction of new machinery and the factory system – even if not to the same extent as their historic rivals, the Japanese.

It is for sure that by the late Tokugawa period, not only sericulture had been introduced to most parts of Japan but also the technology had taken a great advance. By the mid-nineteenth century the Japanese had not only caught up Chinese know-how (until then Chinese techniques were still on the whole more advanced) but also introduced some new instruments or modified them, as it was the *zagury*, a type of reeling machine already widespread in China but then introduced in Gumma and Fukushima

prefectures, permitting to overcome the hand-operating machines. Moreover in Japan these technical changes were followed by the organization of the production, creating workshops outside the household. “In China such separation of functions did not occur until the advent of steam filatures”.

About this comparison we have to consider two aspects. One question is: why were the Chinese incapable of overcoming western competition. It is clear that Japan, even though with smooth transformation, after the first choc represented by the arrive of the Commodore Perry in Nagasaki, could tackle this confrontation ? What complex play of factors resulted in some traditional areas within China enjoying progress whilst others fell victim to decline or stagnation?

One factor – valid about China and Japan - emerges with great clarity is that there was a very close link between the introduction of a capitalistic approach in the agricultural sector - responsible for producing the mulberry leaves upon which silkworms feed - and the development of silk industries that exploited this new agricultural potential. Obviously, the issues to be taken into account in establishing this link are: the organisation of production in the agricultural areas supplying the silk industry; the possible expansion of such areas; the distance between where the raw silk was produced and where it was sold; the policies and historical development to be seen within the sector overall.

What is beyond doubt, however, is that in both Asian countries and Europe before and along the eighteenth century silk industry had seen great expansion (in the production of raw silks, and of yarns and textiles). Such a phenomenon is traditionally explained by the fact that this typical luxury product now became available to substantial new groups of consumers, in Europe certainly as well in China and Japan. As described by the English traveller, Robert Fortune, before the Taiping wars (1850-65), in an important production centre as Hang-chou, the use of silk was remarkable “among the Chinese for their dandyism. All except the lowest labourers and coolies strutted about in dresses composed of silk, satin, and crepe....The native of Hang-chow, both rich and poor, were never contented unless gaily dressed in silks and satins”. As has been observed: “the absence of sumptuary laws and the prosperity enjoyed by eighteenth-century urban elites and some ordinary people enabled them to adopt the latest silk fashions”. Responding to this increasing demand from outside as well from internal consumers, the silk industry became concentrated in particular areas, such Hu-chou, Chia-hsing and Hang-chou.

On the opposite in Japan there was a more dispersed production and in 1850s and 1860s, with the opening of the treaty ports, several new centres of sericulture emerged, as Nagano, Gifu, and Yamanashi. In China it is interesting to note here that as a result of increasing competition from the private sector, and of growing specialisation and division of labour (direct consequences of larger

domestic consumption), there was a drop in the number of imperial silk manufactories, which supplied solely the court and its elites. Whilst the latter had totalled around twenty in the early Ming period, they had decreased to just three by the middle of the eighteenth century: in Nankin, Su-chou and Hang-chou. Clearly such manufactories specialised in elaborate and costly fabrics, while the private sector which became ever more solidly established during the seventeenth-eighteenth century produced cheaper mass fabrics. Indeed, it has also been pointed out that the imperial court itself began to turn to the private manufacturing sector. Yet while the private sector stimulated the (home) production of raw silk and yarns by both farmers and silk-spinners, the severe control which the eunuchs of the imperial court attempted to exert over the growing class of urban weavers caused deep unrest that could often lead to popular disturbances.

Another point that should not be overlooked is the extensive role of silk within society itself, and the fiscal value of the material that might be used in the payment of taxes.

3. In Europe and especially in the Po Valley factors worthy of note include the relative decline in textile production especially within areas such as the Venetian Republic. There was meanwhile a sharp upturn in the production of raw silk and expansion in the agricultural areas given over to the mulberry

plantations that required. But if during the eighteenth century the area given over to such agricultural production in Venetia was the largest in any Italian region, from the beginning of the following century it would be the region of Lombardy that occupied this position. There, one sees clear capitalist investment both in agriculture (with sizeable farms specialising in the cultivation of mulberry trees) and in the steam-powered spinning mills which gradually edged aside home production. In Venetia, on the other hand, such production (raw and reeled silk) would continue to prevail - as we will see, this was also the case in Canton and in the more technologically-advanced Shanghai. Thus Italian twisted yarns played a key role in the international silk market, even if there is no doubt that, in terms of the relation between raw material (raw silk) and finished product, yarns necessarily possessed less added value than did finished textiles.

In France, the silk industry continued to focus upon the production of textiles and silk ribbons (the latter, for example, being a speciality of Saint-Étienne and Saint-Chamond, neighbouring towns outside Lyons). However, such ribbons were also an important product of the silk industry at Krefeld in the Rhineland, an area which became a real competitor in the European textiles market during the eighteenth/nineteenth century. Other national textiles industries – such as that in Britain – were less important. However, if Britain lagged behind France, Italy and Germany in the quality of finished

fabrics, and even more so in its production of raw silk and its ability to cultivate mulberry trees, its importance as a commercial and colonial power was such that it could channel Chinese products towards its own ports. This, together with other factors, would lead to a sharp increase in the price of raw silk shipped from Canton, the port which the Ch'ing dynasty used from the seventeenth to the middle of the nineteenth century as the point of departure for Chinese silks destined for foreign markets, Japan included.

Nevertheless, one is not justified in concluding that such increases were solely due to growing foreign demand from abroad. It is reasonable to conclude, after Lillian M. Li, that the increase in the price of Chinese raw silks during the course of the eighteenth century was due to a general increase in prices, partly as a result of the influx of American silver, partly as a result of increasing demand and population numbers: amongst the other products affected by increases was rice, which went up by 125% during the course of the eighteenth century. This was clearly a major factor, given that such demand both from imperial manufactories and amongst Chinese consumers “of the middling sort” had a significant effect upon prices - even if it is difficult to actually quantify those effects. (Here, one should perhaps point out that, in general, the commercial records of Europe’s colonial powers provide us with a more detailed picture of Cino-European trade links than do internal Chinese sources.) What data we

do have show that the price of raw silk in Canton doubled between 1702 and 1799, so it seems unfounded the complaints made by the Ch'ing authorities that it was high foreign demand which was pushing up prices, given this accusation clearly underestimated the effects of the domestic market.

The importance and growth of raw silk production would continue in the following century, and to a certain extent reverse the price trend: the decreases in prices can be explained by excessive supply, which drove down the market value of merchandise. One English merchant at the time would observe: “the Chinese supply is large enough to cushion the impact of the sharp rise in foreign demand...The quantity produced to supply the native consumption is so enormous, that notwithstanding the vast increase in export during the past ten years, the average of prices is lower than when the export was but one-fourth of its present amount. The silk grower looks to the home market for fixing the value of his produce, and prices range according as that demand is active or dull; little or no effect being produced by the foreign exportation, except among the speculative holders at the port”. And another British observer, this time a botanist, would make the same comment: “the quantity exported bears but a small proportion to that consumed by the Chinese themselves. The 17.000 extra bales sent yearly out of the country have not in the least affected the price of raw silk or silk manufactures. This fact speaks for itself”. The same market phenomenon can also be seen with tea.

There is no doubt that for most of the eighteenth century China was, when it desired, capable of flooding the European market with both finished silk fabrics and precious raw silks. (The East India Company seemed to hold the lion's share of this market; however, one should not overlook the role played by the French East India Company, which was undoubtedly very active up to the middle of the century.) We know, for example, that in 1693 the value of finished Chinese fabrics exported amounted to 430,000 *tael*, a figure which had grown to 650,000 just two years later. Up to this point raw silk had undoubtedly accounted for a smaller part of the value of such exports; then, from the 1750s onwards, Britain would push firmly for increased exports of raw silk – almost certainly to make up for the reduced exports of raw silk from Italy.

The *Jin Hai* – the ban on maritime trade links between China and the West – had been abolished by the emperor Kangxi in 1685, allowing Westerners into the main ports of Southern China (Canton and, to a lesser extent, Whampoa, Amoy, Ningpo and Foochow); the measure had undoubtedly stimulated the exports of raw and finished silks, even if its positive effects were accompanied by unforeseeable consequences (for example, in the area of China's direct competition with the West). Then, in 1757, the Emperor Qianlong would restrict the presence of Westerners to the port of Guangzhou alone, a measure which gave the city a practical monopoly that made it a key point of

reference for the silk trade and a linchpin of relations with the West. Europeans had been authorised to live in the commercial centre of the city as early as 1686, and the significance of the silk trade here would have a knock-on effect in other areas: Guangzhou became a centre for the export of both raw and finished materials (porcelain, tea, sugar and even flowers) and was home to the *Shisanhang* – also known as the *Thirteen Ong* – a trade consortium for the import-export of goods which is sometimes referred to by the misnomer “The Thirteen Factories”. It is a fact that the raw silk carried on British ships over the period 1723-1792 grew “from 5 metric tons to 163 metric tons, making Canton the main city-port exporting silk” (Shanghai, on the other hand, would only really make its presence felt from the middle of the nineteenth century onwards). One possible input derived by the circumstance that from the middle of the eighteenth century British imports of raw Chinese silk were strictly connected with the demand of the silk-weavers of Spitalfields, whose business was going through decades of expansion. It is, for example, no coincidence that British import duties on Chinese silks would be reduced to the same level as those on Italian goods – a measure that was almost certainly taken to encourage the imports from China which were to make good the drop in exports from an Italy where production had declined due to a disease affecting mulberry trees.

4. Nevertheless the increasing presence in Chinese markets of European colonial powers, whose aggressiveness reflected their undoubted technological superiority, went together with the growing weakness of the central Chinese government. Not only did the Europeans have growing numbers of mechanical spinning frames and weaving looms, they had also introduced an industrial factory system predicated on the pursuit of the highest possible profit margin through the import of cheap raw materials and the export of finished goods. However, when one looks within Europe itself one sees that the adoption of more technologically advanced methods in both the agricultural sector and in manufacturing (silk-reeling, spinning and weaving) within different countries could lead to a radical change in the traditional industrial hierarchies between the nations themselves, in Italy on the first place.

As early as the nineteenth century, Asia's relations with the West revealed evidence of a kind of an "imperialistic" pressure in the rapport between raw materials and finished products. By the second half of that century, the results seemed to be sufficiently clear. Within this context, Britain became an ever more decisive presence, particularly within the ports of Canton and Shanghai in China, exerting pressure both as a national entity and through the East India Company (though, during the course of the nineteenth century, all such European trading companies would gradually disappear). At the same

time, there was a fall in China's traditional trade links with the Philippines, both because of the decline in the amount of silver yielded by American mines and the fact that Spain's position as a maritime power was being taken by a newcomer, the United States.

In the first half of that century Europe was thus developing a firm establishment of a factory system and an increase in demand for silk fabrics as its consumers acquired greater spending power. The Opium Wars and the one-sided commercial treaties imposed by Britain in 1842 reveal the growing domestic weakness within China and the inevitable supremacy of European industry and technology (including transport). The inevitable result of these advantages was that ever more raw silks but ever fewer finished textiles were exported – and not only to Britain. “By the beginning of nineteenth century the nature of demand for silk goods in the West had changed. The spread of purchasing power among the French peasantry due to land reform, for example, boosted the demand for silk products. From the supply side, the invention of the Jacquard loom not only made possible the mechanical weaving of figured silks but also doubled productivity. Between 1825 and 1850, as a consequence of derived demand from silk piece goods, French sericulture reached unprecedented prosperity”.

Perhaps this statement on France is underestimating what was happening in Italy, which by then was exporting substantially into what had previously been the market for finished Chinese silks; by the

middle of the nineteenth century, its percentage of the world silk trade would actually be higher than China's. What is clear in China is that, up to 1845, there was an increase in the exports of raw silks from Canton, with Shanghai subsequently taking over the leading role in this trade: according to available data, by 1854 the newcomer had already surpassed its rival and within a decade or so would have almost entirely monopolised raw silk exports. Shanghai's great advantages were not only its proximity to Chekiang, the main area of silkworm farming, but also its location within a sophisticated system of transport waterways. Furthermore, it is possible that Canton suffered from a certain traditional way of making business and from the exerted control by the guild of *Hong*, powerful city merchants- that nevertheless didn't impede the trade with many Western companies. Furthermore, in 1843 Canton lost its near monopoly over the export of Chinese goods to the West, allowing Shanghai to become a place where western companies could deal more freely with local traders.

Unfortunately, the domestic political situation in China further hindered the country's ability to respond to the epochal challenge posed by Western technology - a challenge that would have effects upon the whole of Asia, first and foremost, Japan. The Taiping rebellion of 1850-1864 seriously interrupted the entire silk-making sector, not only in Canton and Shanghai but in the whole of the Lower

Yangtze River. Nevertheless the country seemed to overcome part of these difficulties in the 1870s, thanks to the increasing importance of Shanghai.

China seemed able to increase the exports of both raw and spun silk; at the same time, mechanical frames and steam-powered machinery were introduced, in Canton as well in the Shanghai area. The figures for customs duties in Shanghai reveal a seven-fold increase in the total value of silks exported (both raw silks and finished fabrics), passing from around 23 million *tael* in 1870 to 169 million in 1928.

Thus one has to take into consideration the extent to which internal demand determined the character of silk production and enabled it to survive – even though the predominant situation was one in which domestic consumption remained practically unchanged, with China apparently focusing upon the export of raw silk. Indeed if in some regions centres of textile manufacture of some size did survive, this was primarily where these supplied the domestic market. Nevertheless, in the region of Canton it is undeniable that the introduction of mechanical spinning mills not only anticipated the success that Shanghai would enjoy but also stimulated exports of such products: in 1882, spun yarn accounted for only 13.1% of silk exports but by 1895 that figure had risen to 90%, and such products would thence dominate the entire sector of such exports from that port. Even so, Canton continued to fall behind

Shanghai, despite the fact that the former enjoyed a highly suitable climate for silkworm farming: while it might be true that its higher temperatures meant that there could have been up to seven harvests of cocoons a year, only a tiny number of peasant farms were able to take advantage of such conditions (because they had insufficient numbers of mulberry trees). It has been calculated that an entire acre of mulberry plantation could produce just 24 *picul* of leaves, thus it was only the larger properties that were in a position to exploit the favourable climatic conditions and provide feed for seven cycles of silkworms.

5. Overall, therefore, one sees a radical re-structuring of the world silk market in the second half of the nineteenth and the first decades of the twentieth century. A prime factor in this was the way China took advantage of the new technological know-how (steam-powered spinning mills) whilst exemplifying the dynamism then to be seen in Asian economies as a whole (from Bengal to Japan), whose silk industries would ultimately overtake their European counterparts. In Japan where innovations had taken place within the framework of traditional, after the Meiji Restoration in 1868 a mixed pattern of traditional and modern production begun to emerge. In the 1870s several steam filatures were established, as that of Tomioka, in Gumma prefecture. The spread of steam filatures

was certainly slow. Many enterprises accounted a limited number of workers and were in fact more “workshops” than factories . Indeed we know that the move towards modern industry in Japan had run parallel with a development of small- and medium-sized manufacturing concerns. Furthermore, modernisation in this country did not entirely break with the traditions of home labour, whose roots can be traced back to the Edo period in particular. It seems that the dramatic changes associated with big-factory production did not take place for several decades. Furthermore the Japanese silk industry was geographically more extensive than the Chinese, which was limited, in its industrial dimension, to a few regions, primarily the lower Yangtze valley and the Canton delta.

In Europe, and in particular in Italy, still at the beginning of the nineteenth century, silk industry was obviously far from negligible, given that in the first half of the nineteenth century its share of the world market was substantially higher than China’s: in 1820-24, Italy accounted 65.7% of sales, China 11.9% and India 16.6%, with a clear predominance of raw silks amongst its output (exported to numerous European countries, including France). Then, from the 1850s onwards, both Italy and France saw the dramatic spread of pébrine, a disease which destroyed silkworm eggs, and as a result the balance of power within the world silk industry changed. It was in this period that Japanese egg-cards for export to Europe flourished. Indeed, from 1868 onwards, France was forced to acquire abundant

quantities of silk directly from China (which also led to a profound change in the role traditionally played in this sector by French commerce). In 1853 the country had managed to produce some 26 million kg (433,000 *picul*) of silk - alongside its substantial quantities of *soierie d'haute gamme*, manufactured in the Lyons area – but just one year later pébrine would have caused that figure to plummet to 4 million kg (around 67,000 *picul*). True, the disease also spread in the Middle East and Asia, but the current interpretation of events is that both Japan and China turned out to be better prepared than Europe to deal with the infection. In France, Louis Pasteur's work would prove essential in restoring the industry, but at an economic level China had two factors working in its favour as an exporter of raw silk: the high quality of its product and the low costs of its silkworm farming and silk-reeling. It is no coincidence that by the end of the nineteenth century/beginning of the twentieth century, France was the largest importer of *Tsatlee* white silk. And in the same time some modern Japanese filatures were directed by French experts working with European assistants and the latest foreign machinery.

Yet while the French and Italian silkworm farming had to tackle a serious confrontation with the Asian production, the added value of the woven silk fabrics of those countries produced and sold on foreign markets was still far from negligible. In France, such weaving - particularly in the Lyons area

- remained a vital economic sector, and in Italy the situation was more nuanced than it appears. There is no question that pébrine had meant that the country's silk industry continually lost market share to the Chinese – falling from 65.7% in the years 1820-24 to 29.3% in 1856-59 (whilst China's in this latter period jumped to 50.8%, and would never again fall below Italy's). However, the picture is less dramatic if one looks at the actual value of the goods sold. Various factors might lead one to question of validity of the percentage figures we have - for example, how many exports were not registered as they left Chinese ports? How often was the value of the Chinese silk deliberately underestimated? Yet setting these doubts aside, the data we have shows that right up to the First World War the actual value of Italian silk exports exceeded that of those from China. To return to the period 1868-72, when the pébrine epidemic had been defeated, the percentages for the value of these exports show that Italy had 43.4% of the world market as against China's 39.1%; even in 1903-07, the respective figures would be 40% and 24.8%. Obviously, such figures only tell half the story, which should also be examined from other points of view – for example, the role of international events or domestic upheavals. The validity of this observation becomes undeniable when one looks at the advent onto the international scene of two 'newcomers' – the United States and Japan - whose political and economic weight would inevitably change the situation as it stood. True, another nation to play a role here was India, but the

statistical evidence we have shows that it was then only a minor player in the world silk trade – with regard to the amount of Chinese raw silk imported and its own market share (both in terms of volume and value).

During the course of the twentieth century, the United States would emerge as the number one importer of raw silk, with New York becoming “the leading international silk center”; in 1916 the county had imported 233,000 *picul* of raw silk (60% of that traded on the world market), but by the 1920s it would be importing 450,000 *picul* per year. Yet while the United States had clearly become an important importer of this luxury raw material, the appearance of Japan on this world market was extraordinary for its sheer speed. In the years preceding the Second World War (1936-38), it had cut Italy’s share of the world market to 6.2% and China’s to 10.7%, taking a massive 83.1% for itself. Obviously, this is not the place to give this phenomenal growth the in-depth examination it warrants, but one can observe that it is linked with the complex of issues raised by the Meiji Restoration. This process, which began in 1868, would see Japan undertake successful modernization that rose to the challenge posed by Western economies and the parameters upon which they were based. We cannot in any case forget the fact that already the ‘Edo society’ had undergone a sort of “economization” during the Tokugawa period. Accordingly, Japan became an economic power not simply because of rapid

‘Westernisation’ and eagerness to assimilate “the rapidly expanding productive technology of the Industrial Revolution,” but also because of the course Japanese history had already taken in the preceding decades. Whatever the truth of the matter, it is clear that a thorough discussion of Japan must take full account of historical continuity. In this manner, the economic forms that were gradually adopted by Japanese society can only be studied in reference to the political, religious and cultural variables, which act as an analytical part of a unified whole.

All this took place at a time when China was struggling with the internal contradictions within its institutions and within its agricultural and manufacturing sectors. For example, the crisis within imperial manufactories inevitably had a fundamental impact upon quality-goods production, a sector with which traditional manufacturing facilities had co-existed. True, there was a long historical tradition of the use of silk garments, but how could this not clash with the ingrained poverty of many Chinese regions, with the limitations of agriculture, the small scale of mulberry tree cultivation and the absence of new technologies? Nevertheless, in the late nineteenth and early twentieth century the silk industry remained important in China, even if tended to specialise in high-quality raw silks such as tsatlee white silks. At the same time, China was losing its share of the market in high added-value textiles: “the structure of the late nineteenth and early twentieth century domestic demand for silk fabrics was quite

different from that of the early Ch'ing period. No longer was there such a larger part of the market for the ultra-high quality luxury brocades and satins". Indeed it is possible that the weakness of China's silk-manufacturing industry resulted from low demand amongst the middling sort and the absence of a strong urban middle class, due to the inadequacy of the nation's technological response to pressure from Europeans. What is more, that response also depended upon Japanese capital for investment in new factories and the terrific advance of Yokohama in the 1880'. In Japan the smooth transition from the rural sector to the workshops or even to the small factories seemed to have been more effective than in China. It was exemplified by the role of the Yokohama wholesalers who mediated between the rural silk producers and the silk exporters at Yokohama. On the opposite a pervasive scarcity of capital was felt by all segments of the Chinese silk industry. So Shanghai filatures having been located in the cities were frequently undercapitalized. When also Yokohama began to suffer because the wholesalers and the local city banks became not sufficient to finance the silk sector, the Japanese government did intervene directly in financing the silk trade. Lillian Li concluded that "if the banking system was a critical factor in encouraging the flow of capital into the silk business, the silk trade also contributed to the development of Japanese banking [...] an aspect of economic development that has received relatively little attention".

Many questions thus remain open and we are not able to respond adequately to each of them. Certainly the use of steam (in the second half of the nineteenth century) and later the use of electricity; the advent of the railways; the build-up of an arms industry ; the development of a national-scale policy on port facilities had a profound qualitative effect upon the development of manufacturing in the Japanese archipelago. Behind certainly there was the fundamental political system that we call the Meiji Restoration with its many variables political, institutional, mental, sometimes called “nationalistic”. For instance it would be interesting to look at the consequences of a politics that permitted the Japanese firms to control directly the ship movement , “while Chinese companies permitted foreign firms to dominate shipping along the China coast”.

All this is certainly an important chapter in the history of relations and comparison between these neighbouring, and fiercely competitive, nations, even though someone concluded that “the similarities between Chinese and Japanese institutions and practices will indeed appear more striking than their differences, and their common strengths more important than their weakness”. Did then the confrontation from China-Japan and Europe enter in a new dimension ?

All of this shows in any case how domestic and export markets, industrialized production, consumer spending-power, national economic policies and international trade are all bound together. Whatever

the truth, in examining this sector it is our task as historians to unravel the interaction between the various factors in play, to explore how situations alter over time; how the balance of power between international trading partners can change.