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Guimel Hernández - Garay (PhD Researcher at GECCEM Project, Pablo de
Olavide University)

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GECEM - 679371
ERC - StG



WORKING PAPER

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January 2018

¹ This research is sponsored and financially supported by GECEM (*Global Encounters between China and Europe: Trade Networks, Consumption and Cultural Exchanges in Macau and Marseille, 1680-1840*) project hosted by Pablo de Olavide University (Seville, Spain). The GECEM project is funded by the ERC (European Research Council)-Starting Grant, Horizon 2020, ref. 679371. The Principal Investigator is prof. Manuel Perez Garcia (Distinguished Researcher at Pablo de Olavide University).

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ABSTRACT

Historiography about Asian goods consumption in Early Modern Europe has advanced in the understanding of how these commodities changed consumption patterns and production in Europe. Global History indisputably has contributed with a theoretical perspective in this achievement. However, in this literature lacks more studies in the long term and in more specific geographical units. This research intends to contribute with a case study in two specific European ports: Marseille and Seville. The study is about the consumption of Chinese silk fabrics in 1680 – 1840 period and has as aim find the way like these commodities change the taste and pattern of consumption in local population preparing the receipt of Silk fabrics with Chinese taste made in Europe in an import substitution process. An innovation in the research is the use of Chinese sources and the database of GECEM project.

Introduction

This study consists of five sections. The first section is a review of the main historiographical contributions to the topic of consumption in Western Europe from the late seventeenth to the eighteenth century. The global and comparative perspectives of consumption and the role of Chinese luxury products are very important in this section. Among the many luxury Chinese products that arrived massively in Western Europe from the late seventeenth century, silk fabrics were chosen to analyze the impact of Chinese goods on economic development in this region. As a consequence, a review was made of the history of the consumption and production of silk fabrics in Western Europe, placing emphasis on France and Spain, as our study focuses on the cities of Marseille and Seville. In the third section are the research questions and the hypothesis of the study, which are on the trade, adoption and imitation of these Chinese textiles.

The last two sections are about the sources and methodology of the study. A review is made of commercial records, post-mortem inventories and dowry letters and other sources used in this study. The methodology section explains how these sources will be used to answer the research questions.

1. Eurasian trade and economic development in eighteenth century Europe

The consideration of global trade as a condition for the economic development of eighteenth-century Europe is the result of the convergence of two lines of research in economic history: demand, specifically consumption, as one the engines of development and the perspective of Global History.

Demand and consumption in economic development

For a long time, the explanation of the development in eighteenth century European economy, to be more precise that of the United Kingdom was based mostly on

arguments concerning the supply side of the economy. Two topics are fundamental here. One is the appearance of the factory system as one of the reasons for the British economic advance.² The other is the importance of the technological change in development.³

In this last subject, there are interpretations that not only explain in terms of the economic and emphasize the role of culture in development. For example, Joel Mokyr suggests that culture is the key in the adoption or rejection of new technologies. Economies that had a 'culture of growth' were those that developed.⁴

In supply side studies demand always is something that is not independent. Like in the Say's law of the classic economic theory, the demand appears automatically when the supply is created.⁵ Thus, scholars neglected to do studies in aspects of the demand, especially those related to consumption.

This scene overwhelmingly full of supply sides studies started to change in the 1980s with Neil McKendrick, John Brewer and John. H. Plumb book 'The Birth of Consumer Society'.⁶ In an article of this volume, McKendrick argues that the consumption of the lower classes in eighteenth century England increased in something that conceptualized as 'Consumer Revolution'. This consumption was one of emulation. The middle classes first and, later, the lower classes imitated the

² P. Mantoux, *The Industrial Revolution in the Eighteenth Century*, New York, Harper Torchbooks, 1961; S.A. Marglin, *The Division of Labour: the Labour Process and Class Struggle in Modern Capitalism*, Hassocks, Harvester Press, 1976; S.Pollard, *The Genesis of Modern Management*, London, Penguin, 1968; R.Szostak, *The Role of Transportation in the Industrial Revolution*, Montreal, McGill's-Queen's University Press, 1991; J.A.,Goldstone, 'Gender, Work, and Culture: Why the Industrial Revolution came Early to England but Late to China', *Sociological Perspectives* vol. 39, no. 1, 1996, pp.1-21.

³ D.S., Landes, *The Unbound Prometheus; Technological Change and Industrial Development in Western Europe from 1750 to the Present*, Cambridge, Cambridge University Press, 1969; D.S.L., Cardwell, *Turning Points in Western Technology*, New York, Neale Watson Science History Publication, 1972; A. Pacey, *The Maze of Ingenuity: Ideas and Idealism in the Development of Technology*, New York, Holmes and Meier, 1975; A.,Paulinyi, 'Revolution and Technology', in R. Porter and T. Mikulas (eds.), *Revolution in History*, Cambridge, Cambridge University Press, 1986.

⁴ J. Mokyr, *A Culture of Growth. The Origins of the Modern Economy*, Princeton, Princeton University Press, 2017.

⁵ A. Roncaglia, *Riqueza de ideas. Una historia del pensamiento económico*, Zaragoza, Prensas Universitarias de Zaragoza, 2006, pp. 225-229.

⁶ N. McKendrick, J. Brewer and J.H. Plumb, (eds.), *The Birth of a Consumer Society. The Commercialization of Eighteenth-century England*, London, Europe Publications, 1982.

upper classes ostentation consumption of luxuries in what McKendrick called the trickle-down theory.⁷

McKendrick's suggestion is more a social than an economic explanation of development but was important because broke the dependence of demand on supply. Demand does not automatically appear with the supply either for social or economic causes. Demand is autonomous of supply and is essential to seek how it changed in eighteenth century in order to know its role in economic development. This opened the door to more studies about consumption.

Research line opened by McKendrick, Brewer y Plumb produced various studies about consumption and material culture in eighteenth-century West Europe. Some of these works emphasize by using notarial sources as post-mortem inventories and dowries letters. Nevertheless, most of them are oriented more in the description of what was consumed and less in the economic explanation of that consumption. Otherwise, are studies focused more in the local, putting aside global perspective.⁸

In the 1990s a more economic explanation to the rise of consumption among lower classes is introduced by Jan de Vries, whose theory focuses in household economy transformation that allowed an increase in income to consume in the market. Income growth was a consequence of a change in household resource allocation to earn more money. The movement was from work time for domestic output and from leisure to work time for market oriented output and wage economic

⁷ N. McKendrick, 'The Consumer Revolution of Eighteenth-century England', in N. McKendrick, N. Brewer and J.H. Plumb, (eds.), *The Birth of a Consumer Society. The Commercialization of Eighteenth-century England*, London, Europe Publications, 1982, pp. 9-33.

⁸ C. Shamas, *The Preindustrial Consumer in England and America*, Oxford, Oxford University Press, 1990; L. Weatherill, *Consumer Behaviour and Material Culture in Britain 1660-1760*, London, Routledge, 1988; C. Fairchild, 'The Production and Marketing of Populuxe Goods in Eighteenth-Century Paris', in J. Brewer and R. Porter (eds.), *Consumption and the World of Goods*, New York, Routledge, 1994, pp. 228 - 248; D. Roche, *Histoire des choses banales. Naissance de la consommation dans les sociétés traditionnelles (XVIIe - XIXe siècles)*, Paris, Presses Universitaires de France, 1997; B. Yun Casalilla and J. Torras Elías (dir.), *Consumo, condiciones de vida y comercialización: Cataluña y Castilla, siglos XVII-XIX*, Valladolid, Consejería de Educación y Cultura Castilla y León, 1999.

activities. Preference for money explains change in pattern of consumption from domestic goods to goods produced in the market.⁹

Increase in work time and work intensity that caused income growth for consumption in households is called by Jan de Vries 'Industrious Revolution', in which women have an important role as agents that introduce goods from the market to the household. This range of market goods is not the same that the household produced before, but novelties, even luxury goods traded from America and Asia.¹⁰

In Jan de Vries' theory, changes in the demand are necessary but not sufficient for economic development. 'Industrious Revolution' was a necessary condition for Industrial Revolution, but the last was not inevitable. There were industrious revolutions in different parts of the world that were truncated by insufficient supply conditions.¹¹

Global history approach: Eurasian trade as factor of economic development for Western Europe.

An approach more in the global sense than in the local to explain eighteenth century Europe economic development emerged in the 1970s with the theories of economic system called World-System. The more important of these theories are the Marxists approaches and those from the Annales School.

Interpretations based on theories of economic systems and close to Marxism do not give much importance to global trade. Structuralist tradition determines that there is a world economic system where Europe is the center and the rest of the

⁹ J. de Vries, 'Between Purchasing Power and the World of Goods', in J. Brewer and R. Porter, (eds.), *Consumption and the World of Goods*, New York, Routledge, 1994, pp. 89 - 107.

¹⁰ J. de Vries, *La revolución industrial. Consumo y economía doméstica desde 1650 hasta el presente*, Barcelona, Crítica, 2009.

¹¹ J. de Vries, 'The Industrial Revolution and the Industrious Revolution', *The Journal of Economic History*, vol. 54, no.2, 1994, pp. 249 - 270.

World the periphery, subordinated the latter over the first.¹² Structuralist Immanuel Wallerstein minimizes the impact of global trade, because in his characterization of the World-System, the contribution of East luxury goods to European capitalist accumulation is limited. In Early Modern era, Far East is considered as a marginal periphery, since it contributes little to the development of the world capitalism.¹³

From Annales School, Fernand Braudel also considers the World System as an autonomous economy with a capitalist city that dominates over the rest of the system. Unlike Wallerstein, for Braudel this dominant city changes through time. However, alike the structuralist theory, the rest of the world (that Braudel classifies it in five World-Systems: East Europe, Black Africa, Islam, America and Far East) is even before eighteenth century, subordinate or in the process to be subordinate to West Europe. Far East, in Braudel opinion, was in eighteenth century in process to be incorporated in the World – System of West Europe. Eurasian trade in this century is the beginning of this process.¹⁴

In the 1990s there is a change in the orientation of this trade's interpretation with the emergence of the California School. The scholars of this school give a methodological turn towards global history and make Asia the starting point of their researches. Scholars like Andre Gunder Frank, Jim Blaut, Jack Goldstone, Kenneth Pomeranz and Bing Wong have proposed a series of assertions that challenge the traditional Eurocentric stance on development through the Industrial. First, in the second half of the eighteenth century, China had comparable standards of living to Europe. Second, the markets in China functioned as efficiently or more than in Europe at the same time. Thirdly, China's agriculture was more productive than Europe's. Finally, the economies of both regions had Malthusian constraints on their growth.¹⁵ Kenneth Pomeranz suggests that the “Great Divergence” in economic development between Western Europe and Asia was that Europe had easy access to

¹² I. Wallerstein, *The Modern World System: Capitalist Agriculture and the Origins of the European World Economy*, New York, Academic Press, 1974; S. Amin, *The Accumulation of Capital on a World Scale*, New York, Monthly Review Press, 1974.

¹³ I. Wallerstein, *Capitalist Agriculture*.

¹⁴ F. Braudel, F., *Civilización material, economía y capitalismo. Siglos XV – XVIII*, vol. 3, Madrid, Alianza, 1984.

¹⁵ R. Duchesne, ‘Between Sinocentrism and Eurocentrism: debating Andre Gunder Frank’s Re-Orient’, *Global Economy in the Asian Age*, *Science and Society*, vol. 65 no. 4, 2002, pp. 428 – 429.

coal as an energy resource and to slave labor in their colonies to surmount those limitations.¹⁶

With these premises behind, the California School considers that what this trade can have of importance for the economy depends or is important only for Asia. Frank considers it as the means by which Europe prospered at the expense of Asia¹⁷, while for Pomeranz the important thing is to know why this exchange was not reflected in an economic development in the interior of China.¹⁸

A different approach from Global History, far from Eurocentric or Sinocentric narratives, do conceded more attention to global trade as important part of economic development, and not only for the demand but for the supply. Carole Shammas finds that goods as cocoa, tea, coffee and sugar that European empires produced in its colonies in Asia or America and were consumed in Europe were a major influence for capitalism because slave plantation were these goods were cultivated innovated in widespread practices later as the rationalization of the economic factors and the production for a world-wide market.¹⁹

Maxine Berg led the influence of global trade goods further away. Luxury and exotic goods traded from Asia brought innovations in tastes, in technology, in commercial and marketing strategies, and in financial institutions. More important, however, than the change produced by these goods in consumption, especially manufactured goods, for Maxine Berg, a greater influence was caused in the way that manufactures were produced in some places of Western Europe. Manufactures imported from Asia in eighteenth century, especially Indian cotton textiles and Chinese ceramics, were quality manufactures that could be produced massively with a division of labour and intensive use of this economic factor that were inexistent in Europe. The technologies used in Asia were not imported to produce these goods in

¹⁶ K. Pomeranz, *The Great Divergence. China, Europe and the Making of the Modern World Economy*, Princeton, Princeton University Press, 2000, pp. 109-165.

¹⁷ A.G. Frank, *ReOrient. Global economy in the Asian Age*, Berkeley, University of California Press, 1998, pp. 4-5.

¹⁸ K. Pomeranz, *The Great Divergence*, p. 251

¹⁹ C. Shammas, 'The revolutionary impact of European demand for tropical goods', in J.J McCusker and K. Morgan (eds.), *The Early Modern Atlantic Economy*, Cambridge, Cambridge University Press, 2000, pp. 163 – 185.

Europe, partly because lack of access to production processes. What was done was to produce these goods based on their imitation, which is considered an innovation and an invention in the products. This process resulted in import substitution, based on the creation of manufactures that were not identical to the Asian ones, but made to the taste of the consumer. But in addition these new goods were not simply crafts, but goods made with modern production processes, using energies sources such as coal.²⁰

Convergence of consumption studies and global history approach transformed the role given to global trade in eighteenth century European economies. Global goods were important in two sides of the economy. In the change of the demand through 'Industrious Revolution' these commodities were important part of the new oriented market consumption of the households. In the supply side Asiatic manufactures were a direct influence in the change of production process through import substitution. Two lines of research are opened, one for the study of the consumption of these commodities among the lower classes to test 'Industrious Revolution' and the other for the process of substitution of the Asiatic manufactures.

In the first line we have studies from a global approach on consumption such as those of Anne McCants and Manuel Pérez-García. These studies expose the consumption of Asian goods since the eighteenth century, even in the lower classes. McCants makes an analysis with a notarial source as post-mortem inventories of an orphanage in Amsterdam in eighteenth century, where she evidences that coffee, tea, sugar and Asian goods like Chinese porcelain and textiles were consumed widely by not rich people.²¹

Pérez-García's study is about Murcia in the period 1730 - 1803. Like McCants, Pérez-García uses post-mortem inventories as sources. In addition to this type of documents, it uses other sources such as dowry inventories, commercial records of the Chamber of Commerce of Marseille and the Catastro de Ensenada. The study

²⁰ M. Berg, 'In Pursuit of Luxury: Global History and British Consumer Goods in the Eighteenth Century', *Past & Present*, vol. 182, no. 1, 2004, pp. 85 – 142.

²¹ A.E.C. McCants, 'Exotic Goods, Popular Consumption, and the Standard of Living: Thinking about Globalization in the Early Modern World', *Journal of World History*, vol. 18, no. 4, 2007, pp. 433-462.

exposes the influence of French merchants in Murcia in the 18th century. This community had contacts with merchants and producers from different parts of the world, which influenced the consumption of the population of Murcia. Among these goods were many who came from Asia, as well as silk textiles from Lyon and Grenoble. The trading company that studies Pérez-García is the Roux-Frères that operated from the port of Marseille.²²

In the second line, Maxine Berg shows how this process was for the substitution of Chinaware in England in eighteenth century.²³ In the case of textile sectors this process of substitution can also be followed in goods like cotton calicos from India. Prior to the importation, these products were virtually unknown in much of Europe. The arrival of these goods caused admiration for the quality of the paintings, the printing and the dyeing of the calicos. Of all these areas, Europeans were qualified only in dyeing. They were not able to produce massively textiles with such good quality and low price.²⁴

The new taste for this type of textiles in Western Europe created a market that European producers managed to capture. In order to produce these cotton textiles European manufacturers did not copy the technology used in India nor did they adopt the painting of the calicos. What they did was to use the printing of the dresses through mechanized processes, which allowed them to manufacture massively cheap garments of similar quality and to the oriental taste.²⁵

Otherwise, this process of substitution of Asiatic goods was not successful in all places that it was implemented. Industry of calicos in Marseille in the second half of seventeenth century is one example of not development of substitution despite of being pioneer in this sector.²⁶

²² M. Pérez-García, *Vicarious Consumers. Trans-National Meetings between the West and East in the Mediterranean World (1730 – 1808)*, New York, Routledge, 2013.

²³ M. Berg, *Luxury and Pleasure in Eighteenth-Century England*, Oxford, Oxford University Press, 2005.

²⁴ B. Lemire and G. Riello, 'East and West: Textiles and Fashion in Early Modern Europe', *Journal of Social History*, vol. 41 no.4, 2008, pp. 892-896.

²⁵ Lemire and Riello, 'East and West: Textiles', pp. 896-900.

²⁶ O. Raveux, '« À la façon du Levant et de Perse »: Marseille et la naissance de l'indiennage européen (1648-1689)', *Rives méditerranéennes*, vol. 29, no. 1, pp. 1 – 15.

2. – Consumption and production of Silk fabrics in eighteenth century Europe

Chinese silk fabrics were also among the products that arrived massively from Asia to Europe in the seventeenth century and were replaced by European production in the next century. This local production was inspired by the oriental designs capturing the market that recognized the Chinese design quality. From this displacement, Chinese imports of the silk sector passed from the fabrics to the raw silk in the half of eighteenth century.²⁷ Unlike the other oriental import products, silk sector is interesting since it was an economic activity that had centuries in Europe. Since the Chinese designs arrival, silk sector was transformed, appearing the annual collection system of manufacturing, in which the design gained importance. La Grande Fabrique in Lyon became the most important silk manufacturing center in Europe, dictating fashion to the rest of the continent.

Origins of silk

Silk is a natural fiber originated by the silkworm (*Bombyx mori*), an insect of the order of Lepidoptera. Silkworm is completely domesticated to produce the fiber, therefore does not exist in liberty and has lost the ability to fly and survive in extreme conditions.²⁸

The silk fiber is produced in the silkworm's process of metamorphosis in butterfly. The silkworm is fed from the leaves of the mulberry's tree while it becomes a cocoon. Just before chrysalis breaks the cocoons, these are collected. Not all the buds are selected, only those of texture and perfect form, those that have a certain weight and are white, yellow or pink. The collected cocoons are boiled in water at 110 ° C to kill the chrysalis, remove sericin and take off the filament, which can be up to one kilometer in length. The filaments are wound with the aim of obtaining a homogeneous hank; this process was done by hand. Subsequently, the

²⁷ J. de Vries, 'Understanding Eurasian Trade in the Era of the Trading Companies', in M. Berg et al. (eds.), *Goods from the East, 1600 – 1800. Trading Eurasia*, New York, Palgrave- McMillan, 2015, p.30.

²⁸ C. Basso, et al., *Sericicultura. Manual para la producción*, Buenos Aires, Instituto Nacional de Tecnología Industrial, 2008, p. 28.

hanks pass through the processes of dyeing, drying, weave and decoration. The silk fabric is very durable, long, light, soft and shiny and can be decorated on both sides.²⁹

According to the legendary, there are two different legends that claim Silk's origins. In the first, Lei-Zu, one of the wives of Chinese Emperor Fuxi and Goddess of Silk, was on a walk in the imperial gardens when she saw that butterflies came out of the mulberry branches from the buds and noticed that the cocoons had left fibres finely woven. Emperor Fuxi imposed on the Chinese people the cultivation of mulberry to tame the silkworms in a limited area of his palace. The cloths were of its privilege and passed centuries before the nobility acceded to them.³⁰

In the second legend Xi Lin Shi, a Chinese princess, was drinking tea near to a mulberry tree and a cocoon of silkworm dropped into her cup. The hot tea dissolved it and she discovered the silk filament.³¹

Although these legends have not been corroborated by History, archaeological pieces have been found that date back to the Neolithic period, when supposedly lived these characters, which would belong to the Xia dynasty. The pieces found are a fragment of silk felt (2,800 BCE) and a sculpture of the silkworm (3,000 BCE), made in jade and of considerable size (20.4 cm.). Jade was the material used for rituals. The first remains of silk not in felt, namely spinning and weaving silk, have appeared dated in the Shang (XVIII-XII BCE) and Zhou (XII-III BCE) dynasties. The oldest complete dress found dating from the 3rd century BC. It is up to the Han Empire (206 BCE - 220 CE) when it begins mass production to satisfy the demand both in China and abroad.³²

Beginnings and development of Silk consumption and production of silk in Europe.

²⁹ R. Currie, 'Silk', in R.R. Franck (ed.), *Silk, Mohair, Cashmere and other Luxury Fibres*, Cambridge, Woodhead, 2001, pp. 11-20.

³⁰ Basso et al., *Sericicultura*, p. 28.

³¹ Currie, *Silk, Mohair, Cashmere*, p. 2.

³² C. García-Ormaechea y Quero, 'La ruta de la seda', in *Textil e indumentaria*, El Grupo Español del International Institute for Conservation of Historic and Artistic Works (ed.), Madrid, Universidad Complutense de Madrid, 2003, pp. 141 – 142.

Silk's consumption in Europe started from century I CE, when the emperors and wealthier citizens of the Roman Empire increased their consumption of goods from the East that were brought by caravans on the border with the deserts of Syria and Jordan. Among these goods were spices, perfumes and silk, which for the Romans was the newest and most luxurious of known textiles. The silk came to these caravans from China through what was known as the Silk Road.³³

The secret of silk's manufacture remained in China for centuries. Nevertheless, it was gradually known in different places as in Japan, India and the Middle East. From the latter region it spread to Europe around the eighth century. Silk fabrics' centers in Europe were located mainly in the present Spain, Italy and France.³⁴

In Spain silk production was introduced by the Arabs in the eighth century. The main production centers were Córdoba, Jaén, Baeza, Valencia, Granada, Seville, Málaga and Murcia. In the fourteenth and fifteenth centuries the tradition of sericulture declined, only some cities in the Iberian Peninsula continued to produce silk fabrics, albeit on a low scale and with no possibility of competing with Italian producers. Among them were Segovia, Toledo, Barcelona and Valencia. From the fifteenth century began to establish in the main Spanish cities Italian craftsmen. They were established through guilds in Barcelona, Valencia, Toledo, Córdoba, Málaga, Seville and Granada, which became the main fabric production centers of Modern Spain.³⁵ In eighteenth century, the most prosperous silk fabrics production center in Spain was Valencia.³⁶ The development of the silk fabrics industry in Valencia took place in a context of guild control (raised to Colegio Mayor del Arte by the Spanish monarchy at the end of the previous century) on the production and entry of new members, which was closed for those who were not relatives of masters and also for the foreigners.³⁷

³³ Liu, X., *The Silk Road in World History* (New York: Oxford University Press, 2010) pp. 20-21.

³⁴ L. Mola, *The Silk Industry of Renaissance Venice*, Baltimore, Johns Hopkins University Press, 2002, p. 3.

³⁵ Mola, p. 21.

³⁶ R. Franch Benavent, 'La diversidad de los modelos de crecimiento: el contraste entre la evolución económica y el marco social de Cataluña y Valencia en el siglo XVIII', *Pedralbes. Revista d'Història Moderna*, vol. 1, no. 28, 2008, pp. 320 – 326.

³⁷ R. Franch Benavent, 'Los maestros del colegio del arte mayor de la seda de Valencia en una fase de crecimiento manufacturero (1686-1755)', *Hispania*, vol. 74, no. 246, pp. 41-68; R. Franch Benavent, D.

In Italy sericulture was introduced by Arab, Jewish and Greek craftsmen between the ninth and eleventh centuries. By the thirteenth century it had been confined to only five cities, all of which were exporters: Genoa, Venice, Bologna and Lucca. By the middle of the fifteenth century the silk industry in Italy evolved from the artisan to a more entrepreneurial production. By the end of this century other cities had successfully established silk fabrics. Among these cities were Milan, Ferrara, Modena, Siena, Perugia, Naples, Catanzaro and Messina. In the sixteenth and seventeenth centuries sericulture in Italy was a production process that concentrated in urban centers and was controlled by the guilds. The production centers were within the city walls, with the exception of the worm breeding. Some parts of silk spinning and weaving were often made in rural areas, but guilds were intolerant and fought it.³⁸

In France the silk industry at the end of the thirteenth century and beginning of the fourteenth century had some silk centers in Paris and Montpellier, albeit on a limited scale. These producers were not able to compete with the Italians. Production centers were established to avoid the importation of textiles. They were established by Italians. The first great center of silk production was Avignon in the fourteenth century; a city that at that time was the seat of the papacy and where velvet silk was produced. By the fifteenth century in the city of Lyon had established Italian merchants who imported silk from Italy. To counteract the dependence on Italian silk textiles King Louis XI ordered by edicts the installation of looms in this city, laying the foundations of what will be later *La Grande Fabrique* in Lyon. Another of the production centers that counted on the royal favor was the one of the city of

Muñoz Navarro and L. Rosado Calatayud, 'La reproducción de los maestros y la transformación de las condiciones sociales de los miembros del Colegio del Arte Mayor de la Seda de Valencia en el siglo XVIII', *Revista de Historia Industrial*, vol. 25, no. 65, 2016, pp. 15 – 49. There is a debate on whether guilds were a brake or not for innovation and technological change. Sheilagh Ogilvie is in the first position, while Stephan R. Epstein and Valentina Fava are in the latter. S. Ogilvie, 'The Economics of Guilds', *The Journal of Economic Perspectives*, vol. 28 no. 4, 2014, pp. 169-192; S. Epstein and V. Fava, 'Trasferimento di conoscenza tecnologica e innovazione in Europa (1200-1800)', *Studi Storici* vol. 50, no. 3, 2009, pp. 717-746. In the research line of Franch, Muñoz and Rosado, José A. Nieto and Juan C. Zofío argue that the decline of manufacturing production in Madrid did not close the guilds to these social groups. J. Nieto Sánchez and J. Zofío Llorente, 'Los gremios en Madrid durante la Edad Moderna: una revisión', *Revista Internacional de Ciencias Sociales*, vol. 34, no. 1, 2015, pp. 47-61.

³⁸ Mola, *The Silk Industry of Renaissance Venice*, pp. 3, 14.

Tours, that although had problems in the beginning became one of the main of the kingdom.³⁹

Changes in European silk production

By the end of the sixteenth century, in Europe there is a well-established silk fabric industry, although oriental silk fabrics continued to arrive. With the opening of new trade routes to the east, the silk trade and European production will change.

A new route for Asian products was the one that was opened by the Pacific Ocean through the new domains of the Hispanic Monarchy in Asia and America. The Manila-Acapulco route was inaugurated in 1571 and it was a Galleon carrying goods from the East, including silk fabrics, once or twice a year from that port in the Philippines to the port of Acapulco in New Spain. Some of these goods were sold in America and the rest in Spain. The port of arrival was Seville, which had the monopoly of goods arriving from America.⁴⁰

The other trade route for goods from the east that was opened for Europe was that of the Cape of Good Hope. Although initially dominated by Portugal, by the sixteenth century was controlled by the Netherlands and England and to a lesser extent France through its East India companies. This route massively introduced goods from Asia, as they had never entered from the old Silk Road and the Pacific route. In spite of this, these two routes did not disappear.⁴¹

Chinese silk fabrics as well as other oriental goods changed the taste of European consumers. This caused the producers of Europe to change their silk fabrics incorporating designs with oriental motifs to win a market that was changing their preferences.⁴² Ahead of this change was placed the city of Lyon.

³⁹ Mola, pp. 43 - 45.

⁴⁰ M. Bonialian, 'Comercio y atlantización del Pacífico mexicano y sudamericano: la crisis del lago indiano y del Galeón de Manila, 1750-1821', *América Latina en la Historia Económica* vol. 24 no. 1, 2017, pp. 7 - 36; M. Bonialian, 'Acapulco: puerta abierta del Pacífico, válvula secreta del Atlántico', in J. Olveda, (coord.), *Relaciones intercoloniales. Nueva España y Filipinas*, Zapopan, El Colegio de Jalisco, 2017, pp. 127 - 146.

⁴¹ de Vries, *Goods from the East*, pp. 17-25.

⁴² de Vries, p. 30.

Since the late seventeenth century the silk industry in Lyon made innovations in its fabrics. This innovation was not in the production process, but in the design of the fabrics. Before this change the garments were without drawings on the cloth, but the influence of the oriental motivated its inclusion. The silk fabrics manufacturers hired designers in Paris to do these designs.⁴³

Lyon silk manufacturers were organized in a guild, in which some of the masters were not such but capitalists who hired the designers and then the workers of the silk guild to manufacture the fabrics with the designs. This is exemplary case in which it is observed how a guild is able to make innovations when this brings profits and when it is dominated by capitalists.⁴⁴

The new fabrics with designs were called *façonnées*. These fabrics became fashionable, especially for their designs. Every year new designs appeared, restarting the *façonnées* fashion cycle. The *façonnées* appropriated the markets of France and other parts of Europe that could not compete with these designs. The strategy followed by manufacturers in Spain and Italy, for example, was the imitation or theft of French designs and continue to produce fabrics for a market outside the fashion cycle.⁴⁵

According to de Vries, by the middle of the eighteenth century the *façonnées* had reduced the amount of Chinese silk fabrics in Europe, at least on the Cape of Good Hope route.⁴⁶ However, it is necessary to evaluate whether this substitution also occurred in the other Chinese silk fabric markets in Europe. The Mediterranean route, which had come from the Middle East, had declined, but not disappeared, with Marseilles as one of its main centers of distribution. The other route, the one of the Pacific Ocean did not disappear, being Seville its main port of arrival until Cadiz

⁴³ C. Poni, 'Mode et innovation: les stratégies des marchands en soie de Lyon au XVIIIe siècle', *Revue d'histoire moderne et contemporaine*, vol. 45 no. 3, 1998, pp. 593 – 605.

⁴⁴ Sewell, W.H., "The Empire of Fashion and the Rise of Capitalism in Eighteenth-Century France", *Past and Present* vol. 206 (2010), pp. 87 – 105.

⁴⁵ Sewell, W.H., "The Empire of Fashion and the Rise of Capitalism in Eighteenth-Century France", pp. 89 – 97.

⁴⁶ de Vries, *Goods from the East*, p. 30.

replace it in 1717.⁴⁷ In the next section we will formulate our objectives and working hypotheses around these two cities.

3. Research questions and hypothesis

Study research questions aim to contribute in two aspects of Social Consumption History in Early Modern Western Europe. The first aspect is about the degree of consumption of Chinese silk fabrics that were in the population according to their socioeconomic level. The second aspect is about the way in which this consumption changed the tastes of the population and invoked a substitution of imports of the Chinese silk fabrics.

The research questions guided by these objectives are formulated as follows:

- What Marseille and Seville socioeconomic groups consumed Chinese silk fabrics in 1680 – 1840 period?
- What influence Chinese silk fabrics designs had on French and Spanish silk fabrics designs?

Research hypothesis is that in Seville and Marseille Chinese silk fabrics consumption increased from 1680 to eighteenth-century first decades and declined from this moment to 1840 due to import substitution inspired in Chinese and Oriental designs.

The choice of Seville and Marseille as points of analysis is based on the fact that these ports were commercially connected to China through commercial routes other than the Cape of Good Hope. Seville was through the route of the Manila - Acapulco Galleon through the port of Veracruz and Marseille with the ports of the eastern Mediterranean.

In addition, it is interesting to study these two cities for two other reasons. First, Seville, which was at a time of economic decline due to the loss of the commercial monopoly, did not completely lose its power as a redistribution of goods at regional

⁴⁷ A. García – Baquero et al. (coords.), *Sevilla*, Madrid, Mapfre, 1992, pp. 183 – 184.

and national level.⁴⁸ For its part, Marseille suffered the onslaught of state protectionism, which created a large smuggling.⁴⁹ It would be interesting to test if economic decline and protectionism were obstacles to Chinese fabrics diffusion.

In this period, China experienced a growth in production and a large commercial boom. Products such as tea, silk and porcelain are produced in large quantities and not only for the domestic market. The prohibitions to the commerce with the exterior finished in 1683, which stimulated it.⁵⁰

China received in exchange for these exports among other goods, American agricultural products⁵¹ and silver from that same place, which arrived not only through the Acapulco-Manila Galleon, but re-exported from Europe.⁵²

4. Sources

Before beginning with the description of the sources that are used in this research, it is important to define some economic concepts like Output and consumption. This is done with the aim of clarifying what information is being sought and how the sources can help build it. In the studies on the history of world economic development there is a line of research that bases its analysis on the comparison of macroeconomic data. Using indicators such as Gross Domestic Product (GDP) per capita as a basis it determines the level of development of economies from as early as AD 1.⁵³

The methodological proposal of Maddison is inadequate for the measurement of a non-capitalist economy for two reasons if its definition is taking into account. GDP is the goods and services market value produced in a national territory in a national

⁴⁸ A. García – Baquero et al., p. 185.

⁴⁹ F. Gottman, *Global Trade, Smuggling, and the Making of Economic Liberalism. Asian Textiles in France 1680–1760*, New York, Palgrave MacMillan, 2016.

⁵⁰ J. Gernet, *El mundo chino*, Barcelona, Crítica, 2005, p. 432 – 433.

⁵¹ Gernet, p. 433.

⁵² R. von Glahn, *Fountain of Fortune. Money and Monetary Policy in China, 1000 – 1700*, Berkeley, University of California Press, 1996.

⁵³ A. Maddison, *Contours of the World Economy*, New York, Oxford University Press, 2007.

currency.⁵⁴ From the definition is derived, first, that GDP is a measure for the economy of a modern nation-state, a phenomenon that began until the nineteenth century. Comparisons of political-economic entities that did not exist at certain moments in history cannot be made. In second place, GDP is a measurement for a market economy. Thus, GDP is a relevant measurement for modern economies, the production of which for the most part goes through the market. It seems inappropriate to use it as an Ancien Régime economy production measurement, where not all production was converted into merchandise. In any case, it can serve as a measure of the degree to which an economy is shifting from self-consumption to market.

So, in order to know production in an economy that is not totally market-based, such as the Ancien Régime, it is necessary to consider two kinds of output: the market and the non-market. But, in both cases it is difficult to do so since there is no systematic information on sales or non-market output. In addition, non-market output would have to be standardized converting at market prices to be able to be added to the market output. Without standardized information it is very difficult to make comparisons over time. Nevertheless, some authors do consider it necessary production measurements such as GDP as a starting point to know economies long-term growth trajectory.⁵⁵

The same problem of GDP as measurement of a non-market economy has the consumption. According to national accounting in macroeconomic theory, consumption is one of the components of the modern capitalist economy expenditure. It is defined as all the goods that are bought in the national economy (except the purchases of the State) that are not used to create other goods, but to satisfy the needs of the population.⁵⁶

In an Ancien Régime economy, as is the case study of this research, consumption is much more than what modern national accounting contemplates, since a part of

⁵⁴ G. Mankiw, *Macroeconomics*, New York, Worth Publishers, 2009, p. 21.

⁵⁵ K. Deng and P. O'Brien, 'China's GDP per Capita from the Han Dynasty to Communist Times', *World Economics*, vol. 17, no. 2, 2016, pp. 79 – 123. In this article Kent Deng and Patrick O'Brien criticize Angus Madison methodology for China historical GDP. However, they never reject the idea of GDP as a good measurement of economic development.

⁵⁶ Mankiw, *Macroeconomics*, p. 27.

what households consume never goes through the market. Indeed, the greater part of consumption is purchased in the market, the more modern it can be considered an economy since it is a sign of a greater division of labour.

This research seeks to know the consumption of goods that pass through the market in a non-capitalist economy, so that the information found in the type of sources used in it is valid, as it contains information on goods market. The sources used to approximate to know this consumption are notarial, namely the post-mortem inventories and dowries letters.

The use of notarial sources in Economic History is part of the expansion of the repertoire of sources that brought the New History.⁵⁷ They were used in studies of the rural world and later for the history of consumption since it was a source that allowed the latter the possibility of doing series and quantitative analysis. Pioneering studies on consumption made with these sources are those of A. Schuurman and A.M. Van der Woude for the Netherlands.⁵⁸

Probate inventories were legal documents that were made to the death of an adult describing a list of the assets that he would inherit, which were sometimes valued. Probate inventories were widespread throughout the Western world and its colonies.⁵⁹

This source has been widely used in studies on consumption since it allows knowing the products that a household maintained at a certain moment. It is a source that also enables to do comparisons because of their detailed character by localities. Furthermore it can done classification of consumption patterns, lifestyles, material culture in terms of wealth, trade or social status.⁶⁰

⁵⁷ P. Burke, 'Obertura: la nueva historia, su pasado y su futuro', in P. Burke (ed.), *Formas de hacer Historia*, Madrid, Alianza, 1993, pp. 26-31.

⁵⁸ A.M Van der Woude and A. Schuurman, *Probate Inventories. A New Source for the Historical Study of Wealth, Material Culture and Agricultural Development*, Utrecht, Hes and de Graft Publishers, 1980.

⁵⁹ de Vries, *Consumption and the World of Goods*, p. 99.

⁶⁰ B.Yun Casalilla, 'Inventarios *post-mortem*, consumo y niveles de vida del campesinado del Antiguo Régimen. Problemas metodológicos a la luz de la investigación internacional', in B. Yun Casalilla and J. Torras Elías (dir.), *Consumo, condiciones de vida y comercialización: Cataluña y Castilla, siglos XVII-XIX*, Valladolid, Consejería de Educación y Cultura Castilla y León, 1999, pp. 30 - 31.

Nevertheless, a probate inventory presents some methodological problems which must be considered. The first problem is representativeness because there is a bias in the samples taken at random in favor of medium and high stock inventories and a shortage of them for the social base⁶¹. Moreover, there are more inventories for the elderly and for families that are close to disappearing, which had fewer goods.⁶² And finally, there is also the problem that sometimes inventories sample size is not appropriate to do total population inferences.⁶³

Another kind of problems is related with probate inventories data. First, probate inventories records are presented as what at a given time a family or individual possessed, which would be equivalent to a stock. This is accurate if what is wanted to study is the material culture, however, it is limiting if it is wanted to analyze the consumption demand, since for this it is needed a dynamic variable, namely a flow of what was consumed. Finally, is necessary to convert goods values to the same monetary unit to do comparisons.⁶⁴

It is suggested that a solution for problems with probate inventories is choosing a broad sample, but especially, it is necessary that its composition be as careful as possible, avoiding the choice of inventories of widowed persons and becoming critical of each document. It is also suggested that other sources be used for the classification of wealth levels of inventories and for the differentiation between stocks and flows. These sources may be one that reveals the age, the size of the household, if there are surviving relatives and the occupation of the deceased in the first case and the family budgets in the second. For the conversion into the same monetary unit it is necessary to use deflators, which must be constructed and interpreted with caution.⁶⁵

⁶¹ de Vries, *Consumption and the World of Goods*, p. 99.

⁶² Yun Casalilla, *Consumo, condiciones de vida y comercialización*, pp. 33 – 34.

⁶³ de Vries, *Consumption and the World of Goods*, p. 105.

⁶⁴ Yun Casalilla, *Consumo, condiciones de vida y comercialización*, pp. 35 – 36; de Vries, pp. 102 - 104.

⁶⁵ B. Yun Casalilla, p. 37; J. de Vries, pp. 104 – 105.

5. Methodology

In this section, it is presented trans-national history as the methodological approach used in this study and the methods preferred used in it: “histoire croisée and social network analysis. In addition, it is also presented the methodological tools used in the study: Relational databases and Geographical Information Systems. Finally, it is described, how are used this methods and tools with the historical sources to answer our questions.

Trans - national history.

With the term trans-national history it is referred to a history approach that emphasizes the relations between societies and social groups that are located in different places and the role of the mediators in these societies. Also, for trans – national history is relevant how and why the exchanges between social groups are adapted, adopted or rejected.⁶⁶

Trans - national history is an approach that can be used for the analysis of societies located in entities that are beyond the borders of the national states, so it is not exclusive to modern history. In addition, it is free of ideological constructions that limit the scope of the research.⁶⁷

Although, according to Yun Casalilla trans – national history is not a method, do has preferred methodologies: entangled history and social network analysis.⁶⁸

Entangled history (Histoire Croisée) mainly uses two methodological tools: connections and comparisons. According to William McNeill connections can be represented as the origin and engine of all type of changes in History: economic, social, politic, military, cultural, religious. In the other hand, connections are the links

⁶⁶ B.Yun Casalilla, ‘The History of Consumption of Early Moderne Europe in a Trans – Atlantic perspective. Some New Challenges in European Social History’, in V. Veronika Hyden – Hanscho, R. Pieper and W. Stangl (eds.), *Cultural Exchange and Consumptions Patterns in the Age of Enlightenment. Europe and the Atlantic World*, Bochum, Verlag Dr. Dieter Winkler, 2013, pp. 25 - 26.

⁶⁷ Yun Casalilla, pp.25 - 26.

⁶⁸ Yun Casalilla, pp.25 - 26.

between big geographical units, beyond cultures and national histories, without the restriction of time.⁶⁹

For McNeill, the connections in the long period mature in transformations and are classified in several types: trade, investment, warfare, religion, migrations, diffusion of useful knowledge, botanical exchanges and the spread of diseases.⁷⁰

In the case of comparisons, according with O'Brien global history extends geographical catchment areas for comparative histories of topics that might be the subject of a study across parish, regional and national boundaries and well as continents, oceans and separable cultures. Comparisons help in global history to surmount the local, to look in at least two mirrors and seek to answer great variety of questions. The answers are better when the research is concentrated in well-defined objects. These objects are in dispersed places and have been studied in some depth. The aim is to find similarities and dissimilarities between them.⁷¹

Social Network Analysis

According to Wasserman and Faust a social network is a finite set or sets of actors and the relations or relations defined in them. The essential and critical feature in a social network is the relational information.⁷² Social Network Analysis (SNA) uses this relational information to study or test theories translating concepts of social theory to formal definitions express in relational terms.⁷³

One of the advantages of SNA is that uses social relationships among the actors not only the individual attributes of them. SNA allows doing structural analysis mapping social structures through social relationships. Then, with the social structure

⁶⁹ W. McNeill, 'The rise of the West after twenty-five years', *Journal of World History*, vol. 1, no. 1, 1990, pp. 1–21

⁷⁰ McNeill, pp. 1–21

⁷¹ P. O'Brien, 'Historiographical Traditions and Modern Imperatives for the Restoration of Global History', *Journal of Global History* vol. 1 no. 1, 2006, pp. 4 - 5.

⁷² S. Wasserman and K. Faust, *Social Network Analysis. Methods and Applications*, Cambridge, Cambridge University Press, 1994, p. 20.

⁷³ Wasserman and Faust, p. 21.

determined, attributes of the actors can say something according to the position that they role in it.⁷⁴

SNA can help solve problems that have been raised using other methodologies that they themselves are unable to do. For example, the prosopographic method, which consists of the preparation of biographical data of members of a social group with the purpose of defining its characteristics that give it identity and its role in a society. However, this method hides the relationships that exist between individuals, something that the SNA does show, through drawing a net of individuals called socio-gram.⁷⁵ Socio-grams show relations between individuals through graphs and nodes, with which the analysis is made.⁷⁶

SNA has as a theoretical basis the affirmation that there are relations beyond those of each social class, with which emphasis is placed on interpersonal relationships and on the level of micro-analysis.⁷⁷ SNA allows to do a “jeu d'échelles” in the analysis, that is, through the level of micro analysis go to the level of macro analysis.⁷⁸

Database

With the development of informatics, it is opened up for the human sciences, including history, a range of new methods and tools that facilitate the definition of research problems, analysis and the presentation of results. Like all novelties, the use of software in History and other humanistic disciplines has brought with it a debate about its nature. This has been because many times it has been abused of its use, becoming an aim and not a means for the research. However, in spite of these mistakes in the application of these new tools in Digital Humanities, if they are used with rigor can be of great utility for the historians. Some of these tools that are used in our research are software to design and operate databases and software to create Geographic Information Systems (GIS).

⁷⁴ B.H. Erickson, 'Social Networks and History. "A Review Essay"', *Historical Methods*, vol. 30, no. 3, 1997, p. 150.

⁷⁵ M. Bertrand, 'De la familia a la red de sociabilidad', *Paginas. Revista Digital de la Escuela de Historia*, vol. 4, no. 6, 2012, p. 50.

⁷⁶ Wasserman and Faust, pp. 67 – 89.

⁷⁷ S. Serrano, sergioserranoherandez.net, [website], <http://sergioserranoherandez.net/images/Textos/IntroARS.pdf>, (accessed 22 Nov. 2017).

⁷⁸ P. Ricœur., *La mémoire, l'histoire, l'oubli*, Paris, Seuil, 2000.

Databases are used in computing to group large data amounts, in order to be able to infer by concrete analysis aspects of distinct realities. Databases are of two types, relational and non-relational.⁷⁹ The former are based on the relational model while the latter do not depart from this model.⁸⁰ Another difference between the two types of databases is that relational databases use SQL and non-relational databases do not.

The databases used in History research are relational. Its implementation in software is through the relational model, which consists in tables of relations with a key identifier. The alternative to relational databases is non-relational databases. Those who support the latter criticize that the relational databases some problems have been encountered with the use of this type of databases. First, they are not dynamic, so they cannot give full explanation of the historical processes, which occur in time. Second, relational databases turn out to be very rigid for historians since the primary keys do not allow handling the heterogeneity found in historical documents.⁸¹

The GECEM project database is still in the design phase; however it is already defined to be a relational database, programmed in MySQL with an interface in Python software. GECEM Project database is the methodology basis of our study. Database information is by archives from China, France, Spain and Mexico and is about GECEM Project topic: commercial and cultural exchanges between China and Western Europe from 1680 to 1840. The purpose of the database is to serve as a starting point for the individual research of each member of the project, but also as a linkage between them to arrive at more solid conclusions for GECEM.

⁷⁹ E.F. Codd, 'Relational Model of Data Large Shared Data Banks', *Communications of the ACM*, vol. 13, no. 6, 1970, pp. 377 – 387.

⁸⁰ In the design of a database, the previous step to the formulation of the relational model is the construction of a logical model, the entity - relationship model. P. Pin-Shan Chen, 'The Entity-Relationship Model-Toward a Unified View of Data', *ACM Transactions on Database Systems*, vol. 1, no. 1, 1976, pp. 9-36.

⁸¹ V. Kantabutra and J.B. Owens, 'Intentionally-Linked Entities: a better database system for representing dynamic social networks, narrative geographic information, and general abstractions of reality' in A. Crespo Solana et al. (eds.), *Spatio-temporal Narratives: HGIS and the study of Trading Networks (1500-1800)*, Cambridge, Cambridge Scholar Press, 2013, pp. 2-8.

Information that this study will upload into the database depends on the sources. For trade records it is uploaded merchant name, ship name and its residence, Chinese silk fabrics in the shipment, its typology and value. In probate inventories case, it is uploaded deceased name, last residence, and the occupation, Chinese silk fabrics and European silk fabrics, its typology and value. For dowry letters is the same than probate inventories, but including now the person that gives the dowry instead the deceased. In the next section it is done a typology for the Chinese and European silk fabrics in French and Spanish.

Typology

There are four basic types of silk weaves: tabby or plain, sergé, satin and crêpes. Tabby is the simplest form of silk weave, it is a plain weave frequently found in taffeta, made of dyed yarns. It is used in dresses and one of the most famous taffeta is the changeant. Sergé are weaves of diagonal appearance and are used mostly in scarves. Silk satin weaves are lustrous and are used in many types of clothes. Crêpes are usually heavy to give better draping qualities. Its appearance is grainy because the high twist of the yarns from which they are made. Crêpe-de-Chine is a representative type of crêpe. Another type of silk is the velvet, one of the most luxurious because the quality of the yarn.⁸²

The first typology is based in *Le Dictionnaire de Commerce* by Jacques Savary of 1723. It is about French terms used to name Chinese silk fabrics imported in Western Europe in the first half of eighteenth century. In addition to the name of the fabric, we add four more categories: design, colours, features and place of origin.

⁸² Currie, *Silk, Mohair, Cashmere*, pp. 30-31.

TABLE 1
FRENCH TERMS FOR CHINESE SILK FABRICS, 1723

NAME	DESIGN	COLORS	FEATURES	PLACE OF ORIGIN
Cha	flowers		simple, light, for summer	
crêpon de la Chine	stripes	white or white with blue stripes		
damas de la Chine		black, red, white, coquelicot		
Dorures fausses	flowers gold and silver		satin unknown in Europe	
Dorures fines	flowers gold and silver		riches	
Dorures de Nankin	flowers gold		satin	Nankin
Gazes	flowers gold and silver	all colors	simple and embossed	
Gorao		crimson and coquelicot		
Kien-tcheou		grey lacklustre		Canton
Pansi				
Peling, pelain, pelang		white or colored		
Satin de la Chine	plain	white or colored	like European satins	
Satin linée			pleated	
Saya				
Serge de soie		many colors		
Taffetas	plain, with stripes, flowers of gold and silver	many colors	wide or narrow	
Furies	painted		satin and tafeta	
Touanse, twanje			satin façonnée	
Tunquin, tonquin		white		Tonkin

Source: Based on H., Belevitch-Stankevitch, *Le gout chinois en France au temps de Louis XIV*, Paris, Jouvet, 1910, pp. 221 – 224.

The second typology is based in *Nouveaux mémoires sur l'état présent de la Chine* by Louis Le Comte of 1697. It is about French terms used to name silk fabrics used in China in the last years of seventeenth century. In addition to the name of the fabric, we add four more categories: design, colours, features and place of origin.

TABLE 2
FRENCH TERMS FOR CHINESE SILK FABRICS, 1697

NAME	DESIGN	COLORS	FEATURES	PLACE OF ORIGIN
Toüanse	plain or with flowers of gold and argent, birds, trees, houses, clouds		satin more stronger and less bright than french one	
Cha	big flowers		simple, tight, less tight and less bright than french tafeta, but more soft.	
Tchéouze			tight, to do underpants, shirts and lining	
kien-tchéou		grey lacklustre	strong and tight, more expensive than satin	

Source: Based on L. Le Comte, *Nouveaux mémoires sur l'état présent de la Chine*, Paris, Jean Anisson, 1697.

The third typology is based in *Le dessinateur, pour les fabriques d'étoffes d'or, d'argent et de soie* by Antoine Joubert de L' Hiberderie of 1765. It is about French terms used to name silk fabrics made in France in the second half of eighteenth century. In addition to the name of the fabric, we add four more categories: design, colours, features and place of origin.

TABLE 3
FRENCH TERMS FOR CHINESE SILK FABRICS, 1765

NAME	DESIGN	COLORS	FEATURES	PLACE OF ORIGIN
Damas satiné	flowers, leaves, fruits in mosaic	one or two colors	satin, for women dress and furniture	
Droguet satiné	mosaic of flowers in relief	one color	satin	
Persienne	flowers in relief	dark colors, white and many colors also	satin and Gros de Tours for church ornaments	
Ras-de-Sicile	mosaic	one color	Gros de Tours for church ornaments	Tours, Lyon
Droguet liséré	flowers	many colors		
Tissu en or ou argent broché (Damas en argent ou en or)	flowers, fruits, leaves in mosaic	gold, silver, white	ornaments, furniture	
Taffetas façonné	flowers	many colors		Lyon
Velours	flowers, leaves, fruits, etc. in mosaic	many colors	ideal for the best designs in dress, suit, church ornaments, furniture	Lyon
Satin	flowers	many colors	bright	
Gros de Tours	flowers	shiny colors	church ornaments, furniture	

Source: Based on A. Joubert de L' Hiberderie, *Le dessinateur, pour les fabriques d'étoffes d'or, d'argent et de soie, avec la traduction de six tables raisonnées tirées de l'"Abecedario pittorico", imprimé à Naples en 1733*, Paris, 1765, pp. 5 – 59.

The fourth typology is based in *Glossaire approfondi du musée des Tissus* by Musée des tissus and Musée des arts décoratifs de Lyon. It is about French terms used to name silk fabrics in Europe and also in Asia before twentieth century. In addition to the name of the fabric, we add four more categories: design, colours, features and place of origin.

TABLE 4
FRENCH TERMS FOR SILK FABRICS

NAME	DESIGN	COLORS	FEATURES	PLACE OF ORIGIN
Brocart	embellish with gold or silver yarn	many colors	oriental origin, precious; used in furnitures	
Broché	many designs in relief	many colors		
Broderie	many designs	many colors	made with needle	
Chiné à la branche	many designs	many colors	word used in eighteenth for fabrics with motifs made with the ikat technique	Asia
Crêpe	many designs	many colors	fabric made with twisted yarn. Grained aspect	
Damas	many designs	many colors	façonné fabric with an effect bright and an effect matt. Used in furniture.	Syrie
Lampas	many designs	many colors	façonné bright, colorful with many ornaments. Eighteenth century	Lyon
Moire	many designs	many colors	light reflects in the fabric showing different types of images	
Pékin	stripped	many colors	used in clothes	
Satin	many designs	many colors	type of fabric, bright and smooth	
Sergé	many designs	many colors	type of fabric	
Taffetas	many designs	many colors	type of fabric, simple and solid	
Velours	many designs	many colors	fabric covered with buckles or fur	

Source: 'Glossaire approfondi du musée des Tissus', *Musée des tissus. Musée des arts décoratifs de Lyon*, [website], http://www.mtmad.fr/Lists/Ressources/Scolaire_Ressources/glossaire-textile-eleves.pdf, (accessed 21 Sept. 2017).

The fifth typology is based in *Diccionario de Autoridades (1726 – 1739)* by Real Academia Española. It is about Spanish terms used to name silk fabrics and also clothes and furniture that were often made with this fibre in Spain in the first half of eighteenth century.

TABLE 5
SPANISH TERMS FOR SILK FABRICS, 1726 – 1739

NAME	
Adúcar	Imaginería
Alama	Joyante
Anafaya	Manoplas
Brocado	Nobleza
Brocatel	Ocal
Brocato	Ormesí
Capichola	Persiana
Capullo	Peñasco
Cendal	Picote
Ceti	Piñuela
Chamelote de aguas	Primavera
Damasco	Raso
Droguete	Segrí
Encubertado	Sarga
Espolín	Sencillo
Espumillón	Tafetán
Felpa	Teletón
Felpilla	Tercianela
Galón	Tirtaña
Glassé	Tisú
Gloria	Toca
Gorgorán	Xerguilla
Gurbión	Zarzhán
Humo	

Source: 'Diccionario de Autoridades', *Real Academia Española*, [website], <http://web.frl.es/DA.html>, (accessed 22 Nov. 2017).

TABLE 6
SPANISH TERMS FOR SILK CLOTHES, 1726 – 1739

NAME	
Afelpado	Corbata
Agujeta	Cordón
Alamar	Cordoncillo
Armador	Estola
Avantal	Ferreruelo
Bonete	Fiador
Brazalete	Flueco
Brial	Garnacha
Burato	Gorra
Cabezón	Gorrete
Calza	Gorro
Capa	Gualdrapa
Capa aguadera	Guante
Capa consistorial	Jubón
Capa larga o de luto	Lienzo
Capa Fluvial	Liga
Caperuza	Listón
Capillo	Manguito
Carmesí	Manta
Casaca	Medias
Cenogil	Ornamentos
Ceñidero	Palatina
Ceñidor	Papelina
Chupa	Passamano
Cíngulo	Pañuelo
Cinta	Pressila
Cintería	Puntas
Cintillo	Randa
Cinto	Ropa
Cintura	Ropilla
Colonia	Solideo

Source: 'Diccionario de Autoridades', *Real Academia Española*, [website], <http://web.frl.es/DA.html>, (accessed 22 Nov. 2017).

TABLE 7
SPANISH TERMS FOR SILK FURNITURE, 1726 – 1739

NAME	
Biombo	Cañamaza
Borla	Colcha
Carpeta	Cortina
Catalufa	Tapiz

Source: 'Diccionario de Autoridades', *Real Academia Española*, [website], <http://web.frl.es/DA.html>, (accessed 22 Nov. 2017).

Geographical Information System

According to Aronoff, a Geographical Information System (GIS) is a computer-based system that captures, prepares, manages, manipulates, analyzes and presents georeferenced data.⁸³ A user can enter in a GIS georeferenced data to analyze it in various ways and to produce informations as maps and other types. A GIS can produce coordinate systems and transformations between them and options for the analysis of georeferenced data.⁸⁴

The use of GIS in history is recent. It has become important in the broad movement of the Spatial Humanities, within which Spatial History has been shaped. This Spatial Turn in History has influenced different lines of research, such as the Global History, which emphasizes the interrelation between different local societies over long periods of time or in short conjectures.⁸⁵

SIG contributes not only to enhance the analysis through the use of Geographical language, but also increases the effectiveness of the data that historians collect. In a study like ours, where a large amount of data is collected in a database, GIS are very useful because through visualization we can detect problems that with other methodologies would not be possible. GIS contribute to organize the variables that

⁸³ S. Aronoff, *Geographic Information Systems: A Management Perspective*, WDL Publications, Ottawa, 1989.

⁸⁴ O. Huisman and R.A. de By (eds.), *Principles of Geographic Information Systems. An Introductory Textbook*, Enschede, The International Institute for Geo-Information Science and Earth Observation (ITC), 2009, p. 32.

⁸⁵ A. Crespo, 'La Historia geográficamente integrada y los Sistemas de Información Geográfica (SIG): concepto y retos metodológicos', *Tiempos Modernos*, vol. 26, no. 1, 2013, pp. 4 - 6.

represent this data, giving meaning to the historical processes, which are complex and non-linear.⁸⁶

Answering Questions

Information that this study will upload into the database depends on the sources. For trade records it is uploaded merchant name, ship name and its residence, Chinese silk fabrics in the shipment, its typology and value. In probate inventories case, it is uploaded deceased name, last residence, and the occupation, Chinese silk fabrics and European silk fabrics, its typology and value. For dowry letters is the same than probate inventories, but including now the person that gives the dowry instead the deceased.

A first approach to Chinese silk fabrics consumption will be made through Seville and Marseille trade records with which it will be determined quantity and value of Chinese silk fabrics that entered these cities in the period 1680-1840. A long term time series will be made with this information to observe the Chinese silk fabrics cycle in both cities.

The next step is a direct analysis of consumption through the comparison between probate inventories and dowry letters. The aim is to know if Seville and Marseille population consumed Chinese silk fabrics, the amount of that consumption and consumption according to socioeconomic stratification.

To answer first question it will be located through database, post mortem and dowry letters that contain Chinese silk fabrics. These documents will be classified according to city, Marseille or Seville and also according to a socioeconomic classification by income, which will be tried to determine depending on the deceased's assets value. With this, it is intended to get closer to knowing the degree of consumption that the population of both cities had of one of the most important imported Asian goods. It is also intended to know how much this consumption varied over the period of time studied. It is interesting to know this variation because it is very likely that this

⁸⁶ J. B. Owens, 'What Historians Want from GIS', *Essays on Geography and GIS*, 2008, pp. 35-45.

import declined from the second half of the eighteenth century, being replaced by fabrics made in Europe.

This leads to the second question, which questions if European silk fabrics presented Chinese designs in order to know if there was a substitution of imports of Chinese fabrics. With the available sources of notaries, it is difficult to know the design of the tissues. It is therefore necessary to have other sources. These sources may be those that are linked with guilds producing silk fabrics. Studies that have been done on guilds in modern times such as those of Zofío and Nieto, Franch, Muñoz Navarro and Rosado and Bernal, Collantes de Terán and García Baquero use municipal sources that allow to know many aspects about its functioning. The sources these authors have used are sources such as exam letters and learning scripts.⁸⁷

Finally, we will also use visual sources that give us clues about this change in the designs. Notebooks found in the Archivo General de Indias are very useful for this, as are the pieces of museums such as the Museum of Tissues of Lyon.

⁸⁷ Nieto Sánchez and Zofío Llorente, 'Los gremios en Madrid', pp. 47-61; Franch Benavent, Muñoz Navarro and Rosado Calatayud, 'La reproducción de los maestros', pp.15-49; Bernal Rodríguez, A., Collantes de Terán, A and García-Baquero González A., *Sevilla, de los gremios a la industrialización*, Sevilla, Instituto de la Cultura y las Artes de Sevilla, 2008.

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