



**TEXTILES**  
AND  
**CLOTHING**  
ALONG THE SILK ROADS

*Thematic Collection of the Cultural Exchanges along the Silk Roads*



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**中國絲綢博物館**  
China National Silk Museum

# TEXTILES AND CLOTHING ALONG THE SILK ROADS

*Chief Editors:  
Feng Zhao and Marie-Louise Nosch*

***Thematic Collection of the Cultural Exchanges along the Silk Roads***



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Silk Roads Programme



中國絲綢博物館  
China National Silk Museum

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# Chapter 4

## The global success of cotton

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By Giorgio Riello and  
Kazuo Kobayashi

*The legendary Huang Daopo (Aunty Huang) is credited with having introduced the techniques of roving, bowing and spinning cotton from Hainan Island to Chinese Mainland at the end of the thirteenth century. Her hagiographer, Tao Zongyi, claimed in his 1366 Chuogeng lu (輟耕錄), literally translated as 'Talks while the Plough is Resting', that it was thanks to Aunty Huang that the Songjiang district in Jiangsu Province, near present-day Shanghai, became a prosperous centre of cotton cultivation and manufacturing. This story is not unique. The ninth century The Collection of National History, a 200-volume work, describes that it was a young man, speaking Chinese and coming from Southeast Asia, who introduced cotton to Japan. He was swept ashore in a small boat in the summer of 799 CE, and tradition maintains that he brought cotton seeds with him. The seeds were washed, soaked and planted in different parts of the country. Yet, in a reversal of the fortunate success of Aunty Huang, these seeds did not germinate to become plants. Japan had to wait for the best part of another seven centuries until cotton cultivation was introduced from mainland Asia.*

***Both stories are not rare. Agrarian and technological innovation is narrated through the device of colourful stories. The pursuit of knowledge of raw materials that could be usefully employed in manufacturing is a constant in human history and a good starting point for the history of cotton. This chapter considers the ways in which cotton was transformed from a botanical rarity into a raw material for a flourishing industry. The ability to fruitfully exploit this plant initiated a 'cotton revolution' well before the fibre became the input of mechanized industrial production in Europe at the end of the eighteenth century. Cotton became a key fibre in Asia and across the world in the period between the year 1000 CE and the seventeenth century; its cultivation and processing through bowing, spinning and weaving allowed for the production of one of the most sought after and most widely traded products in history.***

## **Cotton cultivation**

Today, there are at least thirty main varieties of cotton worldwide, many of which come in a series of local sub-varieties. These varieties are divided into two broad families: 'New World cotton' (with 26 chromosomes and eight species) and 'Old World cotton' (with 13 chromosomes and four species). Among the eight species of New World cotton, the North American *Gossypium hirsutum* is probably the most common in the world today. The so-called Old World species are divided into two large sub-families that comprise *Gossypium herbaceum* (annual variety or 'cotton plant'), originating in northern Arabia and still grown in Asia, and *Gossypium arboreum* (perennial variety, also known as 'cotton tree'), which was first cultivated in India and later across Asia. These varieties are the result of millenarian genetic change, as well as human-induced cross-breeding. The aim was to create strands that produced good-quality lint. Sea Island cotton, for instance, is 2 inches long (~5 cm); Egyptian cotton ranges from 1.5 to 1.66 inches; long-staple American Upland ranges from 1.25 to 1.5 inches; short-staple American Upland is 1 inch long (~2.5 cm); Indian varieties are between 0.6 to 0.9 inches long, and Chinese strands are about 0.75 inches (~1.9 cm).

Etymologists believe that the word 'cotton' comes from the Arabic 'kotom', 'kutn', 'katān', 'kutun' or 'gootn'. Such derivation implies an Asian origin, although not necessarily in present day Islamic countries. It is however difficult to distinguish between wild and cultivated cotton. In its wild varieties, the cotton filament is around 1/3 inch long (~0.85 cm), but in its modern hybridized forms it can reach 2–3 inches in length (~5–7.5 cm), producing a silky thread that can be more easily processed. The process of growing was therefore associated with the development of types of cotton that were more easily processed by spinning and weaving.

Some scholars have suggested that cotton was first cultivated in the Indus valley in 3200 BCE. Fragments found in the *Mohenjo-daro* (the 'Mound of the Dead'), an ancient Indus Valley civilization, circa 2600–1900 BCE, include a variety of textiles that used cotton from a plant closely related to *Gossypium arboreum*.

By the year 600 BCE, cotton trading was beginning in Mesopotamia, reaching Europe in the fourth century BCE. However, the cotton plant did not find a hospitable environment in Europe and its cultivation remained limited. Although some cotton cloth reached Ancient Rome, it most likely remained a rare fabric. Herodotus explained how the troops serving in the Persian King Xerxes' invasion of Greece wore garments made of "wool growing on wild trees". Such "vegetable wool" was "surpassing in beauty and quality the wool of sheep; and the Indian wear clothing from these trees" (Goody, 1996, p.127). Passages like these testify to the limited knowledge of cotton in the ancient world. The same could be said of China where cotton textiles were relatively rare before the beginning of the second millennium CE.

The limited expansion of cotton in the long period of time between its appearance in India in 3200 BCE and the first millennium of the Common Era can be explained in several ways. Firstly, the adoption of cotton in a different ecological environment had to be accompanied by the transmission of sufficient knowledge about its potential uses, but also about the conditions in which the plant could flourish. When cotton finally started penetrating the agrarian systems of China, the Middle East and Africa between 800 and 1000 CE, its adoption was accompanied by a transmission of agronomical knowledge. This is a process that Linda Shaffer defined as 'Southernization', i.e. the spread of raw materials (including cotton) and related processes and technologies from Southern Asia to other parts of the Asian continent, and eventually the entire globe. The problem was finding the right terrain, the correct amount of water, the right cleaning and ginning technologies, and spinning and weaving techniques that could be adapted to suit the fibre. One must also remember that the cotton plant cannot be cultivated in climates with temperatures below 11°C and it needs a temperature of at least 20°C for a duration of 25 to 40 days during maturation.

How did cotton cultivation spread to East Asia and Africa? Cotton cultivation probably reached the Persian Gulf as early as ancient times and from there progressed through Arabia, Ethiopia, Nubia and Upper Egypt to arrive in the Mediterranean in pre-Islamic times. By the tenth century it was found in most regions of the Islamic world. From Asia Minor and North Africa, cotton spread to the Mediterranean, especially to Cyprus, southern Italy and southern Spain (Table 1). These were the only regions of Europe where cotton could be successfully grown. Cotton growing also moved eastwards and arrived in Indochina and Kuangtung (China) in the first or second century CE. However, cotton cultivation and processing did not spread widely to China before the seventh century. Moreover, the spread of cotton cultivation was limited by its climatic tolerance.



**Table 1** The spread of cotton cultivation in Afro-Eurasia

Region of cultivation	First mention	Widespread cultivation and/or economic exploitation
Arabian Gulf	4 <sup>th</sup> century BCE (?)	
Indochina	Han period	
Irrawaddy River	Han period	
Kuangtung and Yunnan	3 <sup>rd</sup> –6 <sup>th</sup> century CE	
Sinkiang	6 <sup>th</sup> –7 <sup>th</sup> century CE	
Sumatra and Java	5 <sup>th</sup> century CE	
Southern China	7 <sup>th</sup> century CE	13 <sup>th</sup> century CE
Kansu	7 <sup>th</sup> –10 <sup>th</sup> century CE	
Japan	9 <sup>th</sup> century CE	
Mesopotamia	7 <sup>th</sup> century BCE	
Northeast Africa	Before 4 <sup>th</sup> century CE	
Nubia	Before 7 <sup>th</sup> century CE	
West Africa (2 centres)	10 <sup>th</sup> century CE	
Southern Spain	9 <sup>th</sup> –10 <sup>th</sup> century CE	
Middle East		12 <sup>th</sup> century CE
Cyprus		12 <sup>th</sup> century CE
Egypt	10 <sup>th</sup> century CE	13 <sup>th</sup> century CE
Sicily	10 <sup>th</sup> century CE	

Source: Watson, 1977; and Kriger, 2005.

It is possible that cotton cultivation spread to the Horn of Africa before the end of the first millennium CE, and – as Colleen Krieger has argued – that two areas of cotton cultivation emerged around the tenth century in sub-Saharan Africa. Historians, archaeologists and geneticists also disagree about the type of cotton plant that spread from India to other parts of Asia and Africa prior to Islamic times. It appears that it was mostly the perennial variety of the cotton plant (*Gossypium arboreum*) that was transplanted. However, this presented important limitations as to how widely cotton could spread, as the annual variety (*Gossypium herbaceum*) has a greater potential to mature in colder climates. This may partially explain why the spread of cotton cultivation was a relatively slow process.

It was only in the sixth and seventh centuries CE that cotton reached the area of present-day Turpan (Turfan) in Xinjiang, northern China, although it was initially used simply as an ornamental plant. Annual varieties of cotton (*pai-tieh*) were cultivated in this region by the ninth century CE and, at the end of the Tang Dynasty (618–709 CE), cotton cultivation was widespread in Fujian.

The penetration of cotton cultivation via the eastern region of Xinjiang was one of two different ways in which cotton reached present-day China. Cotton moved along the silk route connecting Samarkand in present-day Uzbekistan, Altay in Russia and Nainté-Sumë in Mongolia, moving in the opposite direction to the manufactured commodities traded from China to Central and Western Asia. There was however a second route through which the perennial variety of the cotton plant (*Gossypium arboreum*) entered China at the end of the first millennium CE, most likely from Bengal. This was a southern route via Indochina, the southwestern region of Yunnan in China and the island of Hainan, although some historians have expressed doubts about the importance of this specific route.

The spread of cotton to China took several centuries. This is because initially only perennial varieties were cultivated. Only with the development of annual varieties did cotton cultivation spread northwards, becoming an important crop in the Lower Yangtze area in the twelfth century. However, we should distinguish between the biological spread of plants and their economic use. The arrival of cotton into present-day China did not coincide with the immediate development of cotton cultivation or cotton textile production on any large scale. It was only after improvements in ginning, spinning (using fibres of lower length) and weaving that cotton became an economically viable production. Some historians have attributed the slow penetration of cotton into China to the difficulty of adapting the fibre to useful productions. Cotton, a fibre shorter than ramie or flax, necessitated the re-tooling of both spinning and weaving, a procedure that took the best part of a couple of centuries. It was only in the thirteenth century that cotton textile production, as well as cotton cultivation, became two of the most common occupations in rural China. By this time, it was said that the cotton cultivation was “a hundred times more than silk or hemp” and raw cotton was an important part of the yearly royal tribute paid by the eastern provinces of Hunan, Hubei, Fujian, Zhejiang and Jiangsu, and the central provinces of Sichuan, Shanxi and Shaanxi.

In China, cotton cultivation was not just the result of ecological or agrarian factors. The established fibres of silk and hemp were in fact used in place of monetary taxes. Their displacement, or simple integration with cotton, was opposed both by the silk lobbies, who feared that cotton would undermine an established economic equilibrium, and by the imperial government that wished to continue the binary vestimentary system, by which silk and hemp were used for the elite and populace, respectively. Cotton cultivation therefore flourished only when the state chose to promote it. This was eventually achieved as cotton became an easy way to collect taxation in kind. By the fourteenth century the dynasty collected more than half a million bolts of cotton cloth and over 500 tons of raw silk annually. An edict of 1365 made cotton growing compulsory for all farmers cultivating over an acre of land.

The Yuan Dynasty promoted cotton cultivation by making it integral to the taxation and imperial tribute systems, but also by enhancing the agronomical knowledge of this raw material through state-commissioned works on cotton cultivation such as the *Fundamentals of Agriculture and Sericulture* [*Nongsang jiyao*] (農桑輯要) (1273) and through the establishment of various bureaux for cotton cultivation in the provinces. However, by linking the success of cotton to the needs of the state, China created a close correlation between cotton manufacturing and internal supply, discouraging the development of cotton textiles into an internationally traded commodity.

## Cotton technologies

It is correct to say that cotton manufacturing before the mechanization of the eighteenth century was a relatively simple process from a technological point of view. None of the tools or machines used to produce cottons were heavily specialized. The fibre was cleaned by removing the seeds, which is called ginning, and then disentangled and loosened by bowing, before spinning and weaving. Eventually the cloth could be printed or decorated, although in many cases, as in China, cotton was used for padding and therefore was not even spun.

In antiquity the process of ginning was based on a simple tool for separating cotton from the seeds. This was known as *chobkin* in India and it was also present in pre-Ming China. This rudimentary tool was replaced by a more complex device comprising of two wooden rollers moving in opposite directions with a parallel worm and crank-handle. It originated either in South Asia or in the Middle East in the sixth century CE and came to be known in India as *carkhī* or *charkha*, becoming widespread in the subcontinent by the twelfth century. Such a tool is represented in the *Nong Shu* (農書) [Book of Agriculture] (1313) by Wang Zhen.

After cotton was ginned, it had to be bowed. This process was aimed at loosening the fibre before spinning and removing the impurities. The bow (*naddaf*) might have emerged in the Islamic world between the eleventh and the fourteenth centuries. It is unclear if it developed independently in India (where it was called *kaman*) or if it was transmitted to India by Muslim travellers in the fourteenth century, though professor of ancient history, Vijaya Ramaswami, argues that the bow was introduced to South India between the second and the sixth century CE. A similar kind of tool was already present in China in the Southern Song, although it is likely that it only improved after cotton cultivation became widespread during the Yuan and early Ming dynasties and was transmitted to Japan in the fifteenth century. The bow reached Western Europe only in the fourteenth or early fifteenth century (Figure 1).

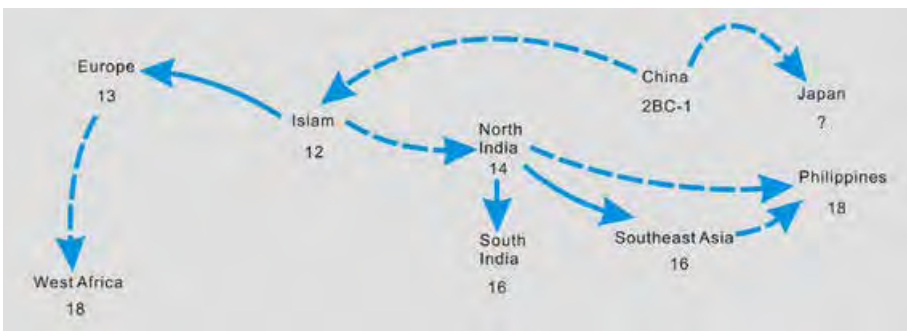
**Figure 1** Technological diffusion of cotton bowing



Numbers are centuries CE of possible invention/diffusion. Source: Riello, 2013, p.52.

Archaeological evidence helps us to understand the evolution of spinning. Terracotta spindle whorls have been unearthed in the Punjab region of India and date to the third millennium BCE. A major technological breakthrough came with the invention of the spinning wheel. Historian Dietmar Kuhn suggests that rudimentary spinning wheels were present in China in the Warring States period (463–221 BCE). These were not used for cotton, although it might explain why the adoption of spinning wheels in cotton manufacturing was borrowed from other fibres as soon as raw cotton arrived in China, Europe and the Islamic areas. Written sources indicate that the spinning wheel was known in the Middle East around 1260 and that it appeared in northern India in the mid-thirteenth/early fourteenth century, in all probability coming from West Asia. Sanskrit sources suggest that the spinning wheel was introduced from India (Figure 3) to the Malay peninsula via the maritime Silk Roads and had reached South Sulawesi and Maluku by 1600, although the Philippines probably acquired it in the following century. The spinning wheel was not successfully introduced in Africa until the colonial period.

**Figure 2** Technological diffusion of the spinning wheel for cotton



Numbers are centuries CE of possible invention/adoption. Source: Riello, 2013, p.53.

Finally, cotton weaving technologies differed greatly according to the location and types of cloth produced. In India, different types of looms could be found side by side. The vertical loom was introduced to the subcontinent in the twelfth century and was used to produce textiles with complex weaving patterns or carpets.

It is probable that the horizontal loom was also introduced to India from Persia in the eleventh century (Figure 3). Some looms, such as the ‘four-cornered frame’ introduced from the Muslim North in the fifteenth to sixteenth century, were used in the South only by Muslim communities. Loin looms were present in the northeastern part of the subcontinent, while small and portable backstrap looms (based on mobile body tension) were common in the domestic production of basic kinds of cloth across South Asia. Historian Irfan Habib suggests that the expansion of “coarse and ordinary cloth” in India led to the use of basic looms. The more sophisticated draw looms were instead used in China, as depicted in the *Nong Shu* (農書), and probably originated as an adaptation of silk looms rather than a technological borrowing from other areas. In West Africa, a variety of looms could be found, the most common of which was a treadle loom that produced narrow cotton strips and was introduced into present-day Nigeria circa 1000–1200 CE.

**Figure 3** A weaver at his loom with his wife spinning thread, India, circa 1860



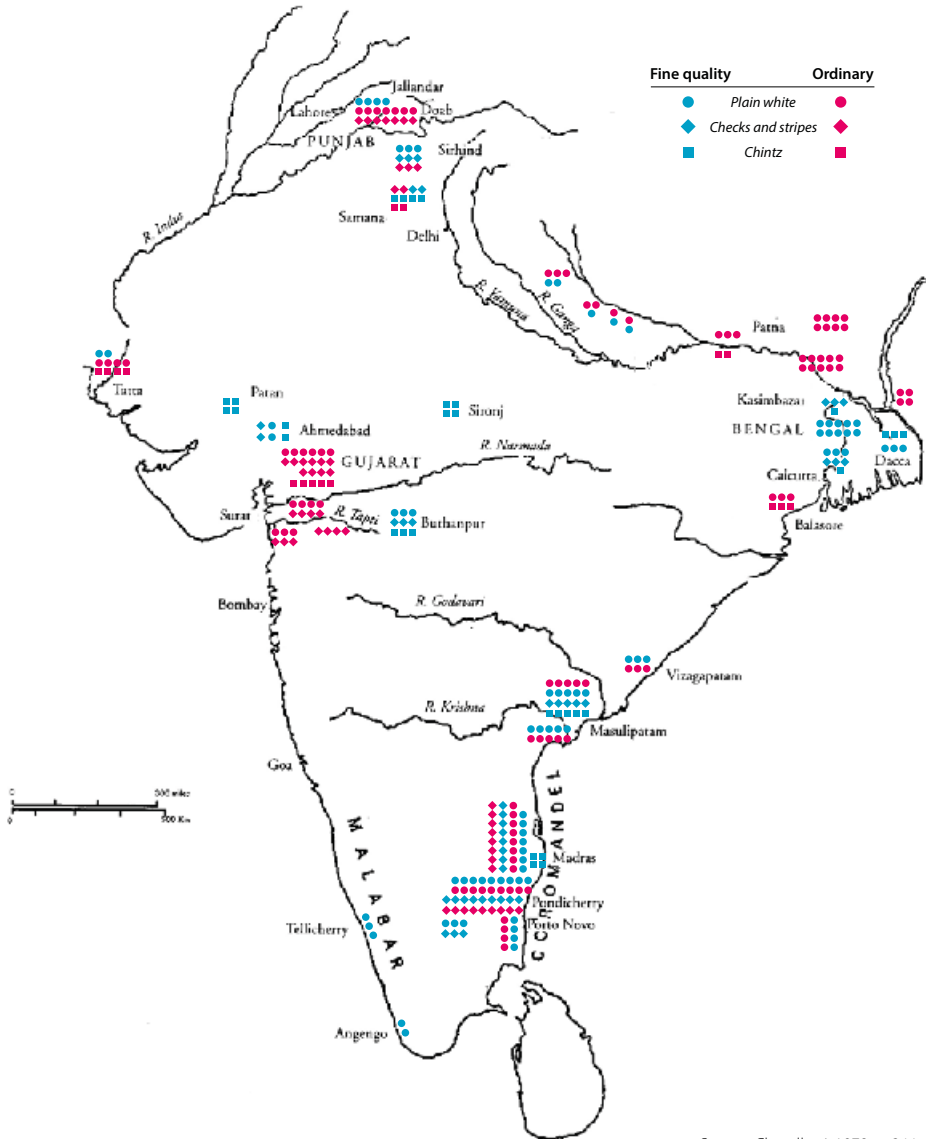
Gouache on mica. One of eleven paintings depicting craftsmen and their shops, 07363:13/(IS). © Victoria and Albert Museum, London.

## Markets and consumption

Cotton textiles produced in India not only connected different regions in the pre-industrial period, they also shaped patterns of global trade and influenced both material culture and manufacturing outside South Asia. Skilled artisans crafted their products to respond to changing consumer tastes in various local markets.

The trade connections of Indian textiles varied over time. These fabrics were initially traded within the Indian Ocean before 1500 CE, and the Atlantic markets were added from the sixteenth century. The four core production areas of cotton textiles in the subcontinent – Punjab, Gujarat, the Coromandel Coast and Bengal – had foreign markets for their handcraft products (Map 1).

**Map 1** Cotton textile production in South Asia in the seventeenth and early eighteenth century



Source: Chaudhuri, 1978, p. 244.

Punjab is a region located in northern India and was once renowned for producing cotton textiles with wood block printing designs. In the seventeenth and eighteenth centuries, cotton goods produced in this region, especially calicoes and muslins, had strong connections by land and sea with West Asia and the Ottoman Empire. Fine cotton goods found huge markets in Persia and the Levant, and it was Armenian merchants who played a key role in the caravan trade between India and the Levant during this period. They not only carried Indian textiles westward, they also transferred printing techniques used in India to West Asia. Meanwhile, cotton textiles manufactured in northern India also found a huge market in eighteenth century Central Asia where Indian textiles of various patterns and qualities were in demand among the masses as well as the elites. Central Asian caravan traders brought these textiles from India via Persia and supplied Indians with horses.

Gujarat, in Western India, had wider connections with markets in North Africa and around the Indian Ocean. Archaeological finds suggest that Indian cottons already reached Egypt, likely via the Western Indian Ocean and the Red Sea, in the first century CE, and cotton textile fragments have been found in the Sulawesi islands of present day Indonesia, which were produced in fourteenth century Gujarat. These examples show that Indian cotton textiles were traded regularly around the Indian Ocean before 1500. East Africa was one of the major destinations for Gujarati cottons. Merchants from Gujarat served as important actors in Western Indian Ocean trade between India and East Africa, and their dhow trade was based on the rhythm of seasonal monsoons. They exported cotton textiles and glass beads to the East African coast where they exchanged these goods with ivory, rhinoceros horn, gold and slaves. African consumer tastes determined what types of cotton cloths were brought from India. This trading pattern persisted even after the Portuguese appeared in the Indian Ocean via the Cape of Good Hope at the end of the fifteenth century.

Before 1600, cottons produced around the Coromandel were exported to Southeast Asia in exchange for spices. The textiles and spice trade between these two regions had mainly been in the hands of Arab merchants who sailed all the way from the Red Sea and the Persian Gulf, until the Europeans' arrival in India. The consumption of Indian cotton textiles in pre-modern Southeast Asia was partly embedded within political and cultural contexts as these textiles, as well as local and other foreign cloths, were used for diplomatic exchanges, rituals and ceremonies. After 1600, cotton textiles from India also facilitated technical innovation to produce new types of cloths, such as batik in Java and *sarasa* (更紗) and *shima-mono* (島物) in Tokugawa, Japan.

The European participation in the trade with India expanded the trading worlds of Indian cottons beyond the Indian Ocean and into the Atlantic. The European East India companies were of fundamental importance for textile imports from India to Europe, and Indian cottons stimulated European desires to produce imitation goods to suit consumer tastes (Figure 4).

European-Asian trade thus propelled the invention of a new luxury in Western Europe and this was particularly the case in Britain.

**Figure 4** Palampore produced on the Coromandel Coast of India for the European market, 1700–1740



316.23 × 226.06 cm. These large textiles were very fashionable in Europe and used as bedcovers. Gift of the Costume Council in memory of Mary Hunt Kahlenberg (M.2012.73). Los Angeles County Museum of Art. Public domain



Meanwhile, many Indian cottons were re-exported from Europe to Western Africa where they were exchanged for gold, ivory, gum arabic and slaves who were taken across the Atlantic to the Americas to sustain the plantation economies. For this reason, Indian textiles were important. If European merchants did not bring what African consumers craved, they could not purchase slaves and other items from local traders. The diverse patterns and colours of Indian textiles attracted consumers in West Africa. Africans not only re-manufactured these textiles to fit their tastes, they also used them for ceremonial or diplomatic purposes, as we have seen in the case of Southeast Asia. The role of Indian textiles in the development of the Atlantic economy was significant by the mid-eighteenth century and, thereafter, competition grew between Indian and British cottons in West Africa. It is worth noting that the received view tends to over-emphasize the role of British cottons to West Africa since the mid-eighteenth century. However, indigo-dyed Indian cottons, called *guinées* in French, were preferred to European cottons by consumers in Senegal and the surrounding areas, at least until the late nineteenth century.

## Conclusion

By the twentieth century cotton had become the most common fibre in the world, and cotton cloth, such as jeans and denim, became omnipresent around the globe. It also became the symbol of resistance to colonial oppression, as was seen with Mahatma Gandhi's khadi movement in India that supported the hand-spinning of local cotton (Figure 5).

The prominence of cotton came to be eclipsed by the rise of synthetic fibres, though the latter are often used in cotton mixes. The story of cotton is therefore one where globalization is undoubtedly a factor in the fibre's cultivation and processing and in the use of the cloth. This chapter underlined how this was not a linear process. Starting with South Asia, cotton cultivation expanded east and westwards through agronomical knowledge and the adoption of new preparatory, spinning and weaving techniques. Innovation was also accompanied by barriers: ecological, technological and institutional. The Silk Roads were one of the major channels through which cotton production expanded across Asia and they were closely linked to other maritime routes before and during the rise of the European presence in the Indian Ocean.

**Figure 5** Gandhi hand-spinning, 1940s



Wikimedia Commons from [www.gandhiserve.org](http://www.gandhiserve.org). Public domain.  
[https://commons.wikimedia.org/wiki/File:Gandhi\\_spinning.jpg](https://commons.wikimedia.org/wiki/File:Gandhi_spinning.jpg)

## Further reading

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- Bally, W. 1952. The Cotton Plant. *Ciba Review* 95, pp. 3402 and 3405.
- Bray, Francesca. 1999. Towards a Critical History of Non-Western Technology. In Timothy Brook and Gregory Blue (eds). *China and Historical Capitalism: Genealogies of Sinological Knowledge (Studies in Modern Capitalism)*. Cambridge, Cambridge University Press, pp. 158–209.
- Cartier, Michel. 1994. *À propos de l'histoire du coton en Chine: approche technologique, économique et sociale*. [About the history of cotton in China: a technological, economic and social approach]. *Études Chinoises*, Vol. 13. No. 1 2, pp. 417–435. (In French.)
- Chaudhuri, K.N. 1978. *The Trading World of Asia and the English East India Company 1660–1760*. Cambridge, Cambridge University Press.
- Dale, Stephen F. 2009. Silk road, cotton road or... Indo-Chinese trade in pre-European times. *Modern Asian Studies*, Vol. 43, No.1, pp. 79–88.
- Deng, Gang. 1999. *The Premodern Chinese Economy. Structural Equilibrium and Capitalist Sterility*. London, Routledge.
- DuPlessis, Robert S. 2015. *The Material Atlantic: Clothing, Commerce, and Colonization in the Atlantic World, 1650–1800*. Cambridge, Cambridge University Press.
- Gervers, Michael. 1990. Cotton and cotton weaving in Meroitic Nubia and medieval Ethiopia. *Textile History*, Vol. 21, No. 1, pp. 13–30.
- Goody, Jack. 1996. *The East in the West*. Cambridge, Cambridge University Press.
- Habib, Irfan. 1980. The technology and economy of Mughal India. *The Indian Economic and Social History Review*, Vol. 17, No. 1, pp. 1–34.
- Habib, Irfan. 1982. Non-agricultural production and urban economy. T. Raychaudhuri and I. Habib (eds). *The Cambridge Economic History of India*, Vol. I. c. 1200–c.1750. Cambridge, Cambridge University Press.
- Inikori, Joseph. E. 2002. *Africans and the Industrial Revolution in England: A Study in International Trade and Economic Development*. Cambridge, Cambridge University Press.
- Kang, Chao. 1977. *The Development of Cotton Textile Production in China*. (Harvard East Asian Monographs, 74). Cambridge, Mass., East Asian Research Center, Harvard University.
- Kobayashi, Kazuo. 2019. *Indian Cotton Textiles in West Africa: African Agency, Consumer Demand and the Making of the Global Economy, 1750–1850*. (Cambridge Imperial and Post-Colonial Studies). Cham, Palgrave Macmillan.
- Kruger, Colleen E. 2005. Mapping the history of cotton textile production in precolonial West Africa. *African Economic History*, Vol. 33, pp. 87–116.
- Li, Lillian. M. 1981. *China's Silk Trade: Traditional Industry in the Modern World, 1842–1937*. (Harvard East Asian Monographs, 97). Cambridge, Mass., East Asian Research Center, Harvard University.
- Machado, Pedro. 2014. *Ocean of Trade: South Asian Merchants, Africa and the Indian Ocean, c. 1750–1850*. Cambridge, Cambridge University Press.
- Needham, Joseph and Dieter Kuhn. 1998. *Science and Civilisation in China; Vol. 5. Chemistry and Chemical Technology. Part 9. Textile Technology: Spinning and Reeling*. Cambridge, Cambridge University Press.
- Prestholdt, Jeremy. 2008. *Domesticating the World: African Consumerism and the Genealogies of Globalization*. Berkeley, University of California Press.

- Ramaswamy, Vijaya. 1980. Notes on the textile technology in medieval India with special reference to the South. *Indian Economic and Social History Review*, Vol. 17, pp. 227–241.
- Reid, Anthony. 1984. *Southeast Asia in the Age of Commerce, 1450–1680. Volume One: The Lands Below the Winds*. New Haven, Yale University Press.
- Riello, Giorgio. 2013. *Cotton: The Fabric that Made the Modern World* [棉的全球史 乔吉奥列略 历史 书籍]. Cambridge, Cambridge University Press (In English and Chinese translation [2018]).
- Riello, Giorgio and Parthasarathi, Prasannan (eds). 2009. *The Spinning World: A Global History of Cotton Textiles, 1200–1850*. Oxford, Oxford University Press.
- Riello, Giorgio and Roy, Tirthankar (eds). 2009. *How India Clothed the World: The World of South Asian Textiles, 1500–1850*. Leiden and Boston, Brill.
- Schafer, Edward. H. 1963. *The Golden Peaches of Samarkand: A Study of T'ang Exotics*. Berkeley, University of California Press.
- Shaffer, Linda. 1994. Southernization. *Journal of World History*, Vol. 5, No. 1, pp. 1–21.
- Sinopoli, Carla M. 2003. *The Political Economy of Craft Production: Crafting Empire in South India, c.1350–1650*. Cambridge, Cambridge University Press.
- Tao, Zongyi. 1959. *Nancun chuogeng lu*. [Retirement to the countryside]. Beijing, Zhonghua shuju. (In Chinese.)
- Vanina, Eugenia. 2004. *Urban Crafts and Craftsmen in Medieval India: thirteenth-eighteenth centuries*. New Delhi, Munshiram Manoharlal Publishers.
- Walker, Kathy Le Mons. 1999. *Chinese Modernity and the Peasant Path: Semicolonialism in the Northern Yangzi Delta*. Stanford, Stanford University Press.
- Watson, Andrew M. 1977. The rise and spread of Old World cotton. In Veronika Gervers (ed.) *Studies in Textile History in Memory of Harold B. Burnham*. Toronto, Royal Ontario Museum. pp. 355–368.
- Weiji, Cheng. 1992. *History of Textile Technology of Ancient China*. New York, Science Press.

