

Macartney's Things. Were They Useful? Knowledge and the Trade to China in the Eighteenth Century

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Trade Missions to China

Tony Blair's visit to China in 1998 was about Britain finding a place in the new global markets of the 21st Century. China is seen to occupy a key place in global trade - its potential domestic market the largest in the world. Trade missions are now at least annual events going back to the major one led in 1995 by the then President of the Board of Trade, Michael Heseltine. The most recent one organized by the Manchester Chamber of Commerce has just finished. These trade missions recall the first great mission to open up trade with China in 1792-3, the Macartney Embassy. This Embassy came on the cusp of Britain's discovery of Chinese consumer and luxury goods, established in a rapidly expanding trade carried on from Canton in silk, porcelain and tea from the seventeenth century. This was also the time when a newly self-confident Britain was aware of the new technologies she was developing and the attractiveness of her goods in European and American markets. She was now seeking other markets in Asia. The importance of China to the British of the eighteenth century bears close parallels to the way we now look to China in the global economy.

Those parallels in the Western and especially British response to China now and in the eighteenth century centre on two major factors: the prospects of new markets, and transfers of knowledge and technology. Joel Mokyr's *The Gifts of Athena* (2002) discusses how a new culture of technology, 'useful knowledge' was made across Europe during the eighteenth century. To what extent was this 'useful knowledge'

transferable to Asia, and what could the¹ West learn from Asia to enhance its own technologies and production processes?

For long periods of the twentieth century China was cut off from open world trade and access. Our expectations now lead us back to the hopes of those who set out on that first Embassy. The significance of China to the British of that period is revealed by an event in the early 1980s.

The Nanking Cargo

In 1983 Captain Michael Hatcher, a British-born Australian, mounted a salvage operation on a ship in the South China Sea. He recovered what became known as the Nanking Cargo, 60,000 pieces of Ming porcelain from one ship which had sunk in the mid 1640s on the way from China to Batavia. The quantities of porcelain recovered caused a minor sensation in the European art and antiquities markets, and also opened historians' eyes to the prodigious quantities of what they considered to be high luxury wares which were being transported from Asia to Europe via colonies such as Batavia three centuries ago. The impact of the Nanking Cargo on the media of today parallels the effect in Holland and northern Europe of the seizure by the Dutch of two Portuguese ships, the Santiago and the Santa Catarina, in 1602. The Catarina alone yielded 100,000 pieces of porcelain. Great sales fetching extremely high prices extended into 1604, and had an electrifying effect on Dutch traders. In the cargoes of such Portuguese ships were also to be found 'pintadoes', the curious painted and printed cottons which the English and Dutch East India Companies were to change by the 1660s from a furnishing fabric to a

1. Joel Mokyr, *The Gifts of Athena. Historical Origins of the Knowledge Economy* (Princeton, 2002).

fashion clothing item.² Europe's East India Companies found and promoted the appeal of eastern luxury goods to western buyers, and this link between East and West stimulated the wider expansion of consumption and industry in Europe which followed.

World Economy and Asian Consumer Societies

The voyages of discovery of the sixteenth century and the East India Companies founded from the seventeenth century extended awareness of, and access to the fabled empire only reached previously via the overland silk route. The voyages opened trade and a sense of a world economy. That world economy brought greater access to Asian consumer societies. Asian consumer goods - cottons, especially muslins and printed calicoes, silk, porcelain, ornamental brass and ironware, lacquer and paper goods, became imported luxuries in Europe. At the time of the Ming Dynasty China was a main export supplier of industrial goods throughout other parts of Asia. It exported iron goods, textiles (silk and cotton), ceramics and lacquer-ware, silver, gold, copper and lead manufactures, a huge range of handicrafts, stationary and books. It also ran an extensive triangular trade based in Indian piece goods and spices.³

It was the entry of the East India companies into this enormous pre-existing trade in the Asian Mediterranean that brought the material culture of a little-known civilized society to Europe. These goods - cottons, especially muslins and printed calicoes, silks, porcelain, ornamental brass and ironware, lacquer and paper goods, fans, objects in ivory and mother of pearl became highly desirable in Europe. These were special luxuries

2. Gang Deng, *Chinese Maritime Activities and Socioeconomic Development c. 2100 B.C.-1900 A.D.* (Westport, Conn. and London, 1997), p. 115.

3. Kent Deng, 'A Critical Survey of Recent Research in Chinese Economic History', *Economic History Review*, liii (2000), pp. 3-4.

for Europeans - they were not the ancient or Persian luxuries of corruption and vice, the gold and rubies of the Indies. They were luxuries associated with a civilized way of life, appealing especially to the middling classes.

The special feature that distinguished Asian manufacture was world class production of fine but affordable consumer ware, marked by diversity, taste and fashion, and produced and traded throughout Asia on a scale not previously encountered in Europe. These Asiatic goods boast all the qualities that European historians have previously argued were created first in world history in the eighteenth and nineteenth-century industrial revolutions in Britain and France. Some of these goods, especially types of ceramics, silks and calicoes could be functional and routine parts of everyday life in India and China, but equally at a higher range of qualities, could be prized as objects of art. Certainly these were exotics in Europe, but more significantly, their diversity of quality and design, combined with their high-volume production and their long traditions as export ware as well as domestic ware made them into very special transformative luxuries to Europeans.

Consider the amount of Chinese porcelain imported into this country in the early eighteenth century - at its highpoint in 1721 nearly 7 million pieces were imported to Britain on voyages that took a year and a half from start to finish. Many of the pieces imported were small items - cups and saucers, small plates and could be valued at as little as 6d a piece, but they were ordered by traders and merchants in Canton in lots of several thousand at a time. They were widely distributed throughout the country by an extremely sophisticated network of distributors and retailers - 'chinamen' and 'chinasellers'- so that many families right down to trades people owned some, and others were familiar with it. [The Dutch imported 43 million pieces, and other Europeans and the British another 30 million over the seventeenth and eighteenth centuries]

The first half of the eighteenth century witnessed a great fascination and enthusiasm for Chinese and Japanese in European material culture and design. Chinoiserie was at the basis of the rococo design style, and Chinese and Japanese porcelain, lacquer ware, silks and Indian printed calicoes were not just imported, but had a wide effect on consumer culture. The porcelain that was imported went with new forms of sociability - coffee houses, club culture and especially tea drinking. Tea consumption grew rapidly over the first half of the eighteenth century - tea shipments from China to Britain increased by four times between 1720 and 1760. By 1760 the cost of Britain's tea imports exceeded what she earned on exports to China by 200 per cent, and the difference had to be made up by shipping out silver to China. The British import duties on tea were cut in the Commutation Act of 1784, and tea imports grew massively, and Britain also re-exported a large amount to Europe and the Americas. Tea had come to challenge imports of Indian textiles.⁴

Making New Consumer Goods

The story of Britain's response to China in the eighteenth century was not, however, just one of how it became a nation of tea drinkers, and the problems of paying for this. It was also a story of how Britain responded to its imports of Chinese manufactured consumer goods. The attraction of these goods to European was their aesthetic appeal and their technologies. The porcelain imported could be produced on a large scale for diverse markets in many distinctive designs and styles. Its technologies were exotic and mysterious. The porcelain recipe was not

4.P.J. Marshall, 'Britain and China in the late 18th Century', in Robert Bickers, ed., *Ritual and Diplomacy. The Macartney Mission to China 1792-1794* (London, 1993), pp. 11-30, pp.16-17.

discovered in Europe until the beginning of the eighteenth century, and then the goods that were produced in Europe were one off luxuries produced in the porcelain works of Europe's enlightened despots. Even Britain's private porcelain works turned out products which were declared by Samuel Johnson to be more expensive than silver.

The Chinese had a technology in its large scale dragon kilns that could produce fine, diverse and yet affordable consumer ware. The dragon kilns were the ultimate in flexible technologies, capable of producing as much as 50,000 pieces at a time over several days - with differences of as much as 600 degrees C. between the firebox at the bottom of the kiln and the chimney in the upper part. They could produce the whole range of goods from high-fired porcelain in the lower chambers to earthenware in the top. There were 3-4000 porcelain factories in the newly rebuilt centre of export ware in Jingdezhen in the seventeenth century., and they were models of the division of labour.⁵

The British, as we have seen, imported large amounts of this porcelain as well as other Asian luxury and consumer goods. But the big effect of this trade was to stimulate Britain's own industrialists to try to capture some of this market, and to produce goods which might equally catch the eye of consumers. These industrialists understood that the success of the goods was based both in aesthetic appeal and in the kind of prices that middling class consumers could pay. Their response was thus to 'imitate', to invent, and ultimately to create new products.

The key response to these commodities in Europe was a process of product innovation and invention through imitation. The European mimesis was not to produce a direct import-substitute, a lesser or perhaps more expensive version of the original, but to turn that imitation into product innovation. In the case of calicoes, Dutch and English flower

5.M. Finlay, 'The Pilgrim Art: the Cultures of Porcelain in World History', *Journal of World History*, ix, 1998, pp. 148, 156.

paintings and prints were substituted for Persian Decani miniatures; fashion dress fabrics for tent hangings.⁶ Japanese lacquer-ware imported as wooden furniture and boxes became British japanning applied to all sorts of surfaces from *papier mâché* to tin-ware and to all manner of goods. Britain's successful transfer of chinaware was not another porcelain, but fine earthenware and cream ware. The British did not transfer the Chinese technology of the dragon kilns, but instead adapted their traditional bottle ovens to the required firing at higher temperatures. In seeking the recipe for porcelain they experimented with the use of all kinds of frit, ash and bone, even after the discovery of the kaolin base for porcelain. The result was a series of new stoneware, cream ware and bone china products.⁷

To recap, these European and especially British new consumer goods tapped into an aesthetic principle behind consumer demand previously satisfied by Asia's manufactured products. They were goods marked by variety and novelty, and in their 'creative imitation' they brought taste and distinction to their middling-class consumers. These goods were not individual craft products. Part of their attraction was the modernity of their production processes: the use of different raw materials and sources of energy such as coal, sophisticated systems of division of labour and mechanisation.

These were the new consumer goods with which Britain by the beginning of the 1790s could claim pre-eminence in Europe. They were fashionable, highly desirable and distinctively British. The advances of

6. John Irwin and Margaret Hall, *Indian Painted and Printed Fabrics* (Ahmedabad, 1971), pp. 22-25, 36-42.

5. Hilary Young, *English Porcelain 1745-94: its Makers, Design, Marketing and Consumption* (London, 1999); Michael Vickers and D. Gill, *Artful Crafts. Ancient Greek Silverware and Pottery* (Oxford 1994); and Michael Vickers, 'Value and Simplicity: Eighteenth-Century Taste and the Study of Greek Vases', *Past and Present* 116 (August, 1987), pp. 98-137.

7. See the arguments in my 'In Pursuit of Luxury: Global History and British Consumer Goods in the Eighteenth Century', *Past and Present*, 182 (2004), pp.85-142.

science and technology with which they were associated made them a part of the Enlightenment. Key figures of the Lunar Society, Matthew Boulton and Josiah Wedgwood understood their achievement in comparison with China, and seriously entertained the prospect of new markets for their products in the place that had originally inspired their inventions and new products.

The Macartney Expedition certainly provides an opportunity to investigate Western perceptions of China at the end of the eighteenth century. But the Expedition was much more significant as a conduit of the ideas held by British statesmen, merchants and manufacturers of recent British advances in science, technology and consumer-goods production. The Expedition provides insight into the complexities of defining 'useful knowledge' both as this is set out by Mokyr, and as it was understood at the time. It, furthermore, underlines the disparities between assumptions and practices which made transfers of knowledge between Europe and Asia, less a story transfers of technology than one of 'missing connections.'

Mokyr's optimistic account of the free flow of information across national boundaries to create a 'Western useful knowledge', one of the fundamental unities of the Western world,⁸ failed to extend to a 'global useful knowledge'. The factors undermining the Macartney Expedition were to be sure about misapprehension of cultural differences between East and West. But they were also about missing connections between scientific and technological cultures at home.

The Macartney Expedition -Background

By the 1780s Britain's trade with China was greater than that of all the other East India Companies combined. Most of this trade was

organized through the East India Company, but there was also considerable private trade. The British government, therefore, sought a direct contact with the Chinese empire through an embassy. One was despatched in 1787-8, under Charles Cathcart, MP, but was aborted after Cathcart died en route. By 1791 new plans were made for another attempt, and so started the famed first British embassy to China, the Macartney Expedition of 1792-3.

George Macartney was appointed Ambassador to China in 1792, and promoted to Viscount Macartney of Dervock in the Irish peerage. He came from an impeccable background for such a delicate diplomatic mission. Born an Ulster Scot in 1737, Macartney's abilities were recognized early, and by the age of 27 he was given a knighthood and commissioned Envoy-Extraordinary to the Court of St. Petersburg. He held this post for two years, and turned down the offer to continue there as Ambassador. On his return to England in 1768 he was elected to the Irish Parliament and appointed Chief Secretary for Ireland. Within six years he was elected for a Scottish constituency to the British Parliament. He then did tours of duty as Governor of Grenada, followed by Governor and President of the Council of Fort St. George in Madras. After five years in Madras, he turned down the post of Governor-General of Bengal and returned to England.⁹ Macartney, therefore had extensive experience in diplomacy and colonial administration, he had lived in Asia and had first-hand knowledge of British imperial relations with India, and he had dealt closely with the East India Company.

The total costs of the Embassy were defrayed by the East India Company, but this was not to be seen as a mere commercial mission. Macartney was to carry a letter from George III to the Qianlong Emperor,

8. Mokyr, *The Gifts of Athena*, pp. 288-291.

9.H.B. Morse, *The Chronicles of the East India Company Trading to China 1635-1834* (Oxford 1926), vol. II, pp. 213-4

and the object of the mission was stated to be to convey the King's congratulations to the emperor on the attainment of his eighty-third birthday. Macartney set out on Sept. 26, 1792, and his detailed instructions were only received on Sept. 8, 1792, but extensive preparations had gone on long before this.

From the point of view of the East India Company this embassy was about freeing and enhancing conditions of trade in China for Britain. Macartney was to meet with the Emperor with the ultimate purpose of entering into negotiations on a series of commercial objectives: first, to reduce the constraints under which trade was carried on in Canton, and to open up other ports for trade nearer to the production districts of Britain's key imports - silk and tea; second, to get exports from China on cheaper terms, and to have duties on imports and exports taken off or at least reduced; third to have English trade put on at least the same footing as that with Portugal; and fourth, to increase imports into China from Great Britain - 'to excite at Peking a taste for many articles of English workmanship hitherto unknown there...Such an increase in the importation from this country into China together with a due encouragement there of the fur trade, as well as of different articles of British commerce in India might turn the balance of the China trade considerably in favour of Great Britain.'¹⁰

The East India Company was particularly hopeful at this point of opening more ports to trade because of recent accounts of landings of merchant vessels in Northern China, Korea and Japan. One British ship under Captain Colnitz traded in the port of Chusan, China, the furs it had from the trade in Nootka Sound on the western coast of British North America. The Company also feared the prospects of Russian competition,

10. *ibid.*, p. 215.

as Russia sought to gain a trading foothold in the Danish factory at Tranquebar on the south east coast of India.¹¹

Macartney was given other instructions by the government on the diplomatic aspects of the mission. He was to go directly to the port at Tientsin, closer to Beijing, and not to stop at Canton. His purpose was to seek a treaty of friendship and alliance with China. He was also ordered to comply with all Chinese ceremonials, as long as these did not do any dishonour to the British sovereign, and he was not to let trifles in these matters to get in the way of gaining the Emperor's favour. And he was to try to exchange envoys with China, leaving behind the Secretary of the Mission, Sir George Staunton as resident minister.¹²

The letter Macartney bore from George III claimed the encounter with the Emperor and his realm arose from a common interest in 'extending the peaceful arts to the entire human race.' The letter set out the assumptions of an enlightened English king who 'directed his people to discover new regions of the globe', 'to extend knowledge of the world and to find the various productions of the earth', and to communicate 'the arts and comforts of life to those parts of the world where it appeared they had been wanting.' The letter also claimed the king's desire to know more about the 'arts and manners of Countries where civilization has been perfected.', and to gain knowledge of 'those celebrated institutions' of China 'which have carried its prosperity to such a height as to be the admiration of all surrounding nations.'¹³

11. Letter to Samuel Garbett, 21 June, 1792; [also see letter, not yet identified, 12 June, 1792, transcripts by Zaccheus Walker, Matthew Boulton Papers, China Trade, Lord Macartney's Embassy, 1792, MS 3782/12/93. Letters 10 and 11.

12. Tseng-Tsai Wang, 'The Macartney Mission: A Bicentennial Review', in Robert Bickers, *Ritual and Diplomacy: the Macartney Expedition to China 1792-94*, (London, 1993), pp. 43-56, p. 48.

13. James L. Hevia, *Cherishing Men from Afar: Qing Guest Ritual and the Macartney Embassy of 1793* (Durham N.C. and London, 1995), p.61

Macartney himself wanted to convey to the Emperor and the Chinese authorities England's curiosity about the world and a desire to learn more about the morals and manners of other peoples. This was the enlightened endeavour of English gentlemen who were not like the Canton traders encountered previously by the Chinese, but instead aspired to be men of taste, intellectual curiosity, disinterestedness and high moral principle.¹⁴

Historians have written extensively on the diplomatic aspects of the Embassy, and subsequent failure of cultural connection. Some have also written on the Embassy as an event in the divergence between Western and Chinese science, focussing especially on scientific instruments.¹⁵ But there is little on practical technologies and capital goods, nor on perceptions at the time of achievements in consumer goods production. This is where I will focus my paper.

Preparations for the Embassy

The Embassy was a huge undertaking. It consisted of 95 people directly connected with the Embassy carried on the 64 gun HMS Lion and the EIC vessel The Hindostan and its tender vessel, The Jackal. Presents valued at £2,486 taken over from the Cathcart embassy, and a new assortment of presents valued at £15,610 was packed into 600 packages and later carried into Peking by 90 wagons, 40 barrows, 200 horses and 3,000 coolies. In addition there were trade goods and other presents bought in Batavia and Canton. The expedition was calculated to have cost the EIC £78,000, though the Chinese paid for all accommodation and travel expenses while in China, not just for the 95 attending the

14. *ibid.*, p. 67.

15. For the most recent discussion see Simon Schaffer, 'Instruments as Cargo in the China Trade', forthcoming, *Annales*.

Embassy, but for a further 600 who accompanied the Embassy as back up support to its landing place of Tiensin.¹⁶

Chief among the preparations was the gathering of presents for the Emperor and suitably skilled members of the Embassy. This was undertaken with a background of assumptions over what would best attract the attention of the Chinese court. In some cases, these assumptions conveyed a newly sceptical view of Chinese exceptionalism. Those on the voyage were confident of British technological progress and commercial institutions. Macartney himself wrote in his pocket book for the journey, that the English were 'at this moment the first people of the world—whenever they are out of their own country...Their generosity, the child of opulence and industry, is unbounded...'¹⁷ Joseph Banks, whose advice framed the Embassy, now placed British technology on a higher level than Chinese achievement. He believed that China now had only 'the ruins of a state of civilization,' but thought the useful and ornamental branches of science would gain from the mission. It was important, therefore, that Macartney take some technically trained members on the Embassy. He commented that while the Chinese had long known all the great inventions which now characterised British civilisation, yet 'a few practical men admitted among them would in a few years acquire a mass of information for which if placed in the industrious and active hands of English manufacturers the whole revenue of the Chinese empire would not be thought sufficient equivalent.'¹⁸

To accomplish the technological goals of the Embassy, and to assemble and repair the British technological displays, Macartney gathered an entourage of 'useful knowledge.' He first sent to Naples via

16.Wang, 'The Macartney Mission', pp.46-7; H.L. Cranmer-Byng, *An Embassy to China. Being the Journal kept by Lord Macartney during his Embassy to the Emperor Ch'ien -Lung 1793-1794*, (London1962), pp. 35, 338.

17.P.J. Marshall, 'Britain and China in the late 18th Century', in Bickers ed., *Ritual and Diplomacy*, pp. 11-30, pp. 14-16.

Sir William Hamilton and recruited from the Chinese mission college two native Chinese who could translate between Chinese and Latin or Italian, and who would advise on Chinese culture.¹⁹ The Scottish natural philosophy lecturer James Dinwiddie and the Swiss clockmaker Charles Petitpierre were also recruited to assemble and orchestrate a performance of the scientific instruments, especially the great planetarium. A mathematical instrument maker, Victor Thibault, a metallurgist, Henry Eades and a botanist, David Stronach were recruited. Along with these were five German musicians and their leader, as well as an unspecified number of artisans, and the painter and draughtsman, Thomas Hickey and the painter, William Alexander.²⁰ Macartney consulted Matthew Boulton, seeking 'an operative tradesman, skilled in metallurgy, who by being in the train of an ambassador might have opportunities of inspecting the Chinese manufactories, foundries etc. and of making such observations as would tend to improve our own & to discover the taste of the people, in order that we might know how best to adapt to it, the different articles in your branch for future exportation to China.' Boulton went to great efforts to oblige, eventually suggesting his own 24 year old mercantile assistant, Zaccheus Walker, who though not an artisan had been brought up in, and had a wide knowledge of the Birmingham trades.²¹ In the event, Macartney did not take anyone from Birmingham - 'I embraced other offers made to me, and am already provided.'²² An unspecified number of artisans and craftsmen were taken

18. Marshall, *ibid.*, pp. 24-5.

19. Sir George Staunton, *An Authentic Account of an Embassy from the King of Great Britain to the Emperor of China* (Dublin, 1798), p. 32.

20. Cranmer-Byng, *An Embassy to China*, p.24; Shaffer, 'Instruments as Cargo', pp. 1-2.

21. Matthew Boulton to Lord Macartney, 25 July, 1792, in Matthew Boulton Papers, China Trade, Lord Macartney's Embassy, 1792, MS 3782/12/93, Birmingham Reference Library.

22. Letter from Macartney to Boulton, Matthew Boulton Papers, March 9, 1792 and July 30, 1792.

on the voyage; they were involved in assembling the equipment and setting up the displays once in China, but we know nothing of who or how many they were.

Sir George Staunton conveyed their feelings on departure: "They had just quitted their former stations, oldest habits, and most close connections, to engage in a hazardous, but interesting, enterprise. They were not Argonauts, indeed, actuated by the hope of obtaining a golden fleece; but, impelled by the strong incentive of curiosity, and eager to indulge the spirit of inquiry, they already contemplated China at a distance, while objects and topics, occupying the attention, and agitating the minds, of those about them, and formerly their own, seemed to lose the interest they had hitherto excited; and a more captivating, though distant prospect, appeared rising from the horizon to take possession of their thoughts.'²³

The view taken by Macartney and those involved in setting up the Embassy was that there must be skilled technicians aboard to assemble and care for the instruments on board. They regarded these skills as unique, and this became an issue of contention with the Chinese officials once they arrived. The Embassy made claims to the Chinese about the delicacy of the instruments, the length of time it would take to assemble them and the need for their own skilled craftsmen to get them working properly. What happened when the presents were being assembled, however, was that an edict was sent out by the Grand Council to gather 'the most skilful Western Ocean men from the Halls [Churches of the missionaries in Peking] who are versed in astronomy and capable of repairing clocks, and bring them to Jehol.' This and other documents indicate that there was in Peking a class of Western missionaries who could be called on by the Emperor as super craftsmen when needed. The Chinese officials made the point that the Embassy's claims to superior

craftsmen were exaggerated: 'Now that the tribute Envoy has seen that there are also people in the Celestial Empire who are versed in astronomy, geography and clock-repairing, and are now helping alongside those who are setting up the articles, he can no longer boast that he alone has got the secret. Presumably he has begun to stop boasting.'²⁴

The next problem was the goods that were to be taken on the Embassy. William Pitt and Henry Dundas took the view that the Emperor should be presented with a select and impressive show of textiles and trade goods which would include astronomical models, reflecting telescopes, electrical machines and air pumps.²⁵ There was a widespread assumption that astronomy was peculiarly esteemed in China, so that the latest astronomical instruments were especially important. Other goods were to be 'specimens of the best British manufactures and all the late inventions for adding to the conveniences and comforts of social life' to serve the 'double purpose of gratifying those to whom they were to be presented, and of exciting amore general demand for the purchase of similar articles.'²⁶

The Chinese recruits offered their advice. They pointed out the great demand in Canton for automata 'extraordinary pieces of ingenious and complicated mechanism, set in frames of precious metal, studded with jewels and producing by means of internal springs and wheels movements apparently spontaneous.' There was already, they pointed out, a large trade in these 'sing-songs' as they were known in Canton, and many of these in the palaces of the Emperor and his mandarins. It was hoped that 'the momentary gratification produced by those gaudy

23. Staunton, *An Authentic Account*, p. 39.

24. J.L. Cranmer-Byng, 'Lord Macartney's Embassy to Peking in 1793', *Journal of Oriental Studies*, Vol. 4, 1957-8, pp.117-180, pp. 151-2.

25. Shaffer, 'Instruments', pp. 1-2.

26. Staunton, *An Authentic Account*, p. 34.

trifles, had been satiated by the accumulation of them,' and that 'whatever tended to illustrate science, or promote the arts, would give more solid and permanent satisfaction to a prince whose time of life would, naturally led him to seek, in every object, the utility of which it was susceptible.'²⁷

Despite these aspirations to send goods of the highest quality, made in Britain by the most modern manufacturing methods, and the stated laudable claims that it was these that would most impress the Chinese emperor, the goods sought out were not of this sort at all. Indeed Macartney and others with him believed that Asian courts would only be impressed by elaborate display, spectacle and pomp. They therefore sent two coaches decorated in the imperial yellow, and an elaborate planetarium ostentatiously embellished in gilt, enamel and chinoiserie decoration including pineapples, all the decoration carried out by London's leading luxury toy and clockmaker, Vulliamy.²⁸ The centrepieces of the Emperor's gifts were in fact this large planetarium, the Hahn Weltmaschine, made not in Britain, but in Germany and bought for £600, and Vulliamy was paid another £650 to embellish it. Other astronomical spectacular instruments were bought in Macau and Canton - a telescope, a Herschel reflector, another orrery, and other gifts were bought by Macartney from among the trade goods brought by the captain of the *Lion*, Mackintosh, 'two watches of very fine workmanship' and 'Parker's Great Lens' which was 12 to 16 inches in diameter.²⁹ Macartney was advised in Macao to add more automata to what he was carrying, that the Emperor had a special fondness for such toys. 'Most of the costly and curious pieces of Machinery exported from England to [China] in the way of trade, together with the principal part of the collection known under the name of Cox's Museum, to an immense amount, had got into

27. *ibid.*, p. 33.

28. Hevia, *Cherishing Men*, p. 79.

29. *ibid.*, p. 104; Shaffer, 'Instruments', pp. 23-24.

the possession of His Imperial Majesty.' Cox's son had indeed set up a branch firm in Canton, making the toys at a third of the price paid in England.³⁰

Another perspective on the types of goods that should be taken on the Embassy was provided by Matthew Boulton. Approached by the East India Company and subsequently by the Lords of the Committee of Council on the Embassy, Boulton was given his own choice on the patterns selected. He also offered his opinion on what would best represent British industry: 'I conceive the present occasion to be the most favourable that ever occurred for the introduction of our manufactures into the most extensive market in the world and the only means of accomplishing that object is to send a very extensive selection of specimens of all the articles we make both for ornament and use. I don't mean as presents to great men but such as are vendable through all the middle and lower class of people & though many of the things we send may not be applicable to their uses yet nevertheless if a few of them should find a certain sale our reward in the end will be great.'³¹

The Gifts and their Reception

When the Embassy landed at Tiensin at the end of July, 1793, there were the problems of off loading the gifts and providing a list of the gifts. Most of the history of Western views of China since the eighteenth century has been based in Chinese responses to the gifts brought by the Embassy, and by controversies over Chinese court rituals of 'kowtow' before the Emperor, and Macartney's refusal to do this, substituting

30. Shaffer, *ibid.*, pp. 16-17. On Cox's Museum and the luxury trade see Marcia Pointon, 'Dealer in magic: James Cox's Jewelry Museum and the economics of Luxurious Spectacle in Late-eighteenth-century London', *History of Political Economy*, supplement, 31 (1999), pp. 423-51.

31. Matthew Boulton to James Cobb, East India House, no date, 1792, letter 19,

instead bowing on one knee as he did before his own sovereign. The 'kowitz', the ritual of kneeling and touching the head nine times to the ground on entering into the presence of the Emperor, was indicative in David Landes's view not just of the Chinese belief that the Emperor was the 'son of Heaven', but of the Chinese sense of 'moral, spiritual, and intellectual superiority' over the rest of the world. Worse than this, however, was China's repudiation of Western science and technology, indicated by the response of the Chinese to the gifts of the Macartney Embassy.³² The Emperor's letter to George III which Macartney took with him on his return to England stated 'The Celestial Empire, ruling all within the four seas, simply concentrates on carrying out the affairs of Government properly, and does not value rare and precious things...we have never valued ingenious articles, nor do we have the slightest need of your Country's manufactures.'³³ A Chinese tapestry of 1793, now in the Maritime Museum at Greenwich, depicting the British embassy bearing tribute to the imperial court has on it verses by the Emperor conveying similar sentiments. 'Now England is paying homage...Though their tribute is commonplace, my heart approves sincerely. Curious and the boasted ingenuity of their devices I prize not.'

These words were quoted time and again from this period to indicate the huge cultural gulf between Europe and China, to indicate China's repudiation not just of Western trade and technology, but of the whole enlightenment project. James Hevia has given careful reconsideration to the interpretation of the imperial edict within the context of the listing, handling, transport, and assembly of the English gifts. He explains the edict in terms of Chinese court protocol over tribute, and the different meanings that the British and the Chinese perceived in the

Matthew Boulton Papers, Macartney Expedition file.

32. David Landes, *The Wealth and Poverty of Nations*, (London, 1998), pp. 335-349.

33. J.L. Cranmer-Byng, 'Lord Macartney's Embassy', pp. 136-7. For the full edict see Cranmer-Byng, *An Embassy to China*, pp. 347-341.

goods and how they were presented. Macartney wished to invest the gifts he brought the Embassy with meanings beyond those of mere trade goods. He wanted to distinguish between the gifts sent by the Crown and the goods the EIC wished to trade in China. He therefore stressed the scientific virtue of the goods. He had differences with Captain Mackintosh the EIC captain of the *Hindustan* over what goods would go to Peking.³⁴ He noted on 1 August, 'Captain Mackintosh not satisfied with my refusal of taking his furs...Now he wants to send trade to Peking...' Two days later the dispute continued. 'Captain Mackintosh came and talked a great deal, the bent of his discourse I understand but will not give way to. He may come to Peking if he pleases but merely from curiosity and not from trade. Nothing can be produced lest it might be of prejudice to our own presents, if finer. Expressed my answer at his putting the chariot on board the junk and told him it must go back. I think he has behaved very ill in this matter.'³⁵

Macartney wanted to convey that the gifts he brought from the Crown and his own presents were both the most precious considered in Britain, and the best examples of British science and technology, and that they were, therefore, superior to the clocks, automata and astronomical instruments brought by earlier visitors.

He wrote to Dundas, 'Those gifts we had to offer would suffer by being confounded with mere curiosities, which however expensive or even ingenious were more glittering than useful. A common catalogue containing the names of ours would not have conveyed an adequate idea of their intrinsic value, or indeed, be understood by any effort of Translation. In lieu of this, a List was delivered to the Mandarins...in which the nature of the several articles was attempted to be described,

34. Hevia, *Cherishing Men*, pp. 73-8.

35. Cranmer-Byng, *An Embassy to China*, pp. 44-5.

measuring their Merit by their utility and deriving even a credit from the omission of splendid trifles.'³⁶

The Chinese, even before the ships had anchored at Tiensin, were very concerned over the tribute gifts. The whole reason the Embassy had given for seeking permission to land so close to the capital, and not as was usual at Canton, was the weight and delicacy of the goods. The Chinese demanded a list as soon as possible, and instructions were then to be given on how these were to be transported, and which presents would be taken on to the Emperor's summer residence, Jehol in Manchuria, a hundred miles north of Peking. In the view of the court, the English had contravened tradition by bringing very bulky items and delicate inventions that they claimed would take a month to set up.³⁷

Much was invested in the Catalogue and in explanations of the gifts. The preamble to the Catalogue stressed that between Sovereigns the intent, rather than the gifts themselves was of greater value. Detailed descriptions were provided of each item with superlatives of their wondrous attributes and their uniqueness. But when we look more carefully at the items given greatest significance by the Embassy, most of these were not the newest and best of British manufacture as seen, for example by her leading manufacturer, Matthew Boulton, but one-off luxuries such as Vulliamy clocks, mechanisms for spectacular displays, and above all a German-made planetarium. These certainly met with Dundas's position in planning the Embassy that the gifts should be 'instruments and material necessary for making the most curious and striking experiments especially such as from their novelty are not likely to have been formerly exhibited by the Missionaries in China, or not at least on so extensive a scale.'³⁸ But the result was that the Embassy showed

36. Macartney to Dundas, 9 November, 1793, cited in Shaffer, 'Instruments', p. 12.

37. Cranmer-Byng, 'Lord Macartney's Embassy', pp.131-2.

38. Cited in Shaffer, 'Instruments', p. 24

that Britain could produce luxury goods, but so too could other European and Asian courts. Great performance was made by the Embassy over the assembly and display of the planetarium and other instruments, much to the annoyance of the Chinese. It was at this point that Macartney was taken on a salutary tour of the Emperor's pavilions. 'The pavilions...are all furnished in the richest manner, with pictures of the emperor's hunting's and progresses; with stupendous vases of jasper and agate; with the finest porcelain and japan, and with every kind of European toys and sing-songs; with spheres, orreries, clocks and musical automats of such exquisite workmanship, and in such profusion, that our present must shrink from the comparison and "hide their diminished heads."' ³⁹ The Chinese thus demonstrated to Macartney that his gifts were not unique nor 'local' to his kingdom; and that his claims to their subtlety and preciousness were much exaggerated. It was on this basis that the Emperor and court officials associated Macartney and his gifts with boastfulness, arrogance and ignorance. The imperial edict he returned with thus separated off his gifts from the intentions of his Sovereign.⁴⁰ Macartney left Peking long before he had hoped, with the object of the display of his gifts in turning the Emperor to consider the commercial aims of the Embassy a total failure.

Why did the British centre their display of the best and most precious of British objects on automata and theatrical scientific instruments? Was this because these items were considered to be high luxuries in Britain, things valued by aristocrats and monarchs, and considered to be enlightened objects of consumption? Or was it because of views taken of China at the very outset of the Embassy as a despotic state, ruled by an ageing Emperor and corrupt officials more interested in performing toys and playthings than in enlightened advances in science

39.Cited in Hevia, *Cherishing Men*, p. 179.

40.Hevia, 'The Macartney Expedition', p. 72.

and technology. Adam Smith had said the same of Britain's feudal aristocracy. The great proprietors, 'to gratify their childish vanity' had sold their lands and relinquished their feudal privileges for goods which might be 'fitter to be the playthings of children than the serious pursuits of men.'⁴¹ And Gillray caught the assumptions those who devised the Embassy in the caricature he drew of the embassy three days after Macartney set out from London. 'The Reception of the Diplomatique and his Suite, at the Court of Pekin' depicted the gifts as playful gadgets in the form of cricket bats, rocking horses, beehives and birdcages.⁴²

The Embassy's rather disorganized and even cavalier method in going about collecting other types of example of British manufacture shows little of the aspirations conveyed in the letter of George III for transmitting the 'arts and comforts of life' to other parts of the world. Matthew Boulton's views of sending an 'extensive selection' of articles 'both for ornament and use', not as 'presents to great men, but such as are vendable through all the middle and lower class of people' were not seriously entertained. He wanted to send patterns for the finer branches of Birmingham goods as well as a collection of the kind of ironmongery exported to America. He provided an extensive list of the best of the new Birmingham and Sheffield ware: buttons, buckles, plated wares, coins made by the new coining machinery, steel ware, steel and brassware, japanned and enamelled wares with accounts of the techniques, watchmakers' tools and surgeons' instruments, lamps including the new Argand lamp, cutlery, razors and scissors, candlesticks and snuffers and a variety of hand mills, jewellery, toys and other small metal goods.⁴³ He placed a special order for a set of fine steel sword blades, 'being persuaded the Chinese are strangers to the excellence of such steel &

41. Adam Smith, *The Wealth of Nations*, Book III, (1776), (Oxford, 1976), p.422.

42. Simon Schaffer draws attention to the caricature, noting that the image was neither inaccurate nor anachronistic. See 'Instruments', p. 31.

43. Matthew Boulton to James Cobb, Letter 19, Matthew Boulton Papers

such tempering.' 'I am of opinion they are better blades than ever was made in this or any other country.'⁴⁴ These were all products of the new modern manufacture much admired in Europe and America. They were the goods and technologies the French were desperate to imitate, seeking to set up a Birmingham in France as good as that in England. No Europeans or Americans could produce the equivalent of English, Birmingham buckles. The list of Birmingham's best that Boulton sent to Macartney was compiled in *A General List of Goods Manufactured at Birmingham and its Neighbourhood*.⁴⁵ It included goods, described in some detail, under the following headings.

1. Buttons - Gilt Plated Steel White Metal Inlaid etc.
2. Plated Wares - so much variety as possible
3. Coin - specimens of each species of money hitherto made at Soho especially such as has been coined for the East India Company
- Query - whether to take a copying machine, or more than one, specimens of rolled copper extremely thin, and a specimen of rolled plated metal (merely to convey an idea of our perfection in the art of rolling) (whether or not any specimens of the ormolu articles)

Birmingham wares in general via:

1. Steel wares
2. locks
3. tools
4. money scales
5. filigree wares

44. Matthew Boulton to James Cobb, 3 August, 1792, Matthew Boulton Papers

6. jewellery
7. gilt toys
8. tortoise shell & ivory toys
9. needles, fish hooks, pins
10. brass sundry
11. spoons
12. Spurs
13. Thimbles
14. Finger & other Rings - esp. white metal
15. link buttons
16. Wood screws
17. Candlesticks & snuffers
18. black lead parcels
19. Composition ornaments
20. Stained glass
21. fire arms
22. Watchmakers' tools
23. buckles
24. buttons
25. leather boxes
26. spectacles
27. Pocket books
28. saddlery & saddlers' ironmongery
29. Hand mills such as coffee mills
30. Coach furniture - chiefly plated

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45. 'A General List of Goods Manufactured at Birmingham and its Neighbourhood' c. 22 July, 1792. A copy of the list was enclosed in Boulton's letter to Robert Wissett, Secretary to the East India Company, 22 July, 1792. China Trade. Lord Macartney's Embassy. 1792. MS 3782/12/93. 70 and 86. Matthew Boulton Papers, Birmingham Reference Library.

A Query on whether or the following articles:

Mixed metals

Pewter wares

Bronzed wares

Japaned wares to who our mode of designing in that article

Iron founders articles

Enamelled Wares

Foil

Surgeon's Instruments

Turnery wares

Wire workers articles

lamps - Argand's patent

Hinges (Brass & Iron), Bolts etc.

Traps

Box Rules

Ink Stands

Brushes - the smallest kinds & combs of different kinds

Awl Blades

Sleeve Buttons, clasps etc.

Sheffield Wares:

Knives

Scissors

Cutlery

Razors - all sorts

Prints - fine & common engraving

These were the unique objects that Embassy might have shown the Emperor and the Chinese court, along with the machines that made them. Macartney visited the steam engines pointed out to him by Watt,

but he decided against taking one: 'having conversed with several intelligent persons who have been in China & having considered the size of the Machine, the difficulty of showing it & other circumstances attending it, the idea of carrying one aboard with us is now given up & some other articles are to be substituted in its place.'⁴⁶ A German planetarium embellished by a luxury London jeweller and clockmaker, despite its cost and the subsequent difficulties of its packaging, assembly and display, was considered crucial for the Embassy; a steam engine was not.

Nor were Boulton's other goods, more amenable to the journey, received with the enthusiasm he expected. His energy in acting as an agent of the Government and ordering patterns for the best of the goods produced in the region did perhaps go a little too far: 'the more I think of this object the more my ideas swell as to the magnitude of the patterns in question & instead of sending £1000 worth as I recommended in my last I now think if it was my own private concern I should send from £4 to 6,000 worth.'⁴⁷ He dramatically reduced the collection and countermanded many of his orders after a letter from Macartney advising him, 'nothing more than mere specimens were intended to be sent to Pekin upon the present occasion, and for which the allotted sum of £150 was deemed sufficient, as no very costly or heavy articles were to be included.' Macartney added that he had extended the sum to £3-400, and added 'you may be assured that I shall do my utmost to distribute everything sent by me for the benefit of the Manufacture so as to excite and encourage the taste and demand for such goods throughout the country and among the several classes of people in China.'⁴⁸

46. Macartney to Boulton, 9 March, 1792, Matthew Boulton Papers.

47. Boulton to Cobb, Letter 19, undated, 1792 Matthew Boulton Papers.

48. Macartney to Boulton, 9 March, 1792, Matthew Boulton Papers.

Boulton complained bitterly to James Cobb at East India House about the chaotic procedure in gathering the goods, and his rough treatment by the East India Company and the Embassy. He had received the order from the Lords of the Committee of Council to make the collection of patterns for the Embassy, but had no subsequent communication from them. He then discovered that a separate approach had been made to another manufacturer, Messrs. Smiths, and that another person had been buying up patterns in Birmingham for the Embassy.

He was then told that if the value of the Birmingham patterns sent came to more than £400, then all would have to be returned. Boulton regarded himself as the key agent of the best of British industry, and had the remit, he had thought, of supplying a representative assemblage of this to the Embassy. Bitterly, he had his goods repackaged in London to meet a limit of £300, and left his invoice.⁴⁹

Were the goods ultimately taken on the Embassy, and were they displayed either in Peking or Jehol? We know little about the goods or how they were received. Most historians have focussed on the planetarium and the clocks. The detailed inventory⁵⁰ of the goods purchased for the Embassy by Francis Baring and John Smith Burges, Chairman and Deputy Chairman respectively of the East India Company, left with the Embassy's records, indicates that such historical attention is perhaps not misplaced, for by far the greatest proportion of the valuation of the £13,123.12.4 spent on articles of presentation for the Embassy (excluding the £2,486 worth of goods also taken from the aborted Cathcart Embassy of 1787) was made up of mathematical, philosophical

49. Boulton to James Cobb, 8 August, 1792, Matthew Boulton Papers.

50. An account of sundry articles purchased by Francis Baring Esq., Chairman...consigned to the care of ...Lord Viscount Macartney', Lord Macartney's Embassy to China. Miscellaneous Letters 1792-95, India Office Records, Factory Records China and Japan 1596-1840, G/12/92, pp. 545-586.

and scientific instruments, including the £1,262.19 spent on the Planetarium. There were, however, other consumer and industrial goods to indicate perceptions at the time of priorities placed on the goods, both as gifts and as potential commodities for a Chinese market. The following breakdown indicates the types of goods that were sent:

Goods Purchased for the Embassy to China*

(values in £,s, d)

Scientific Instruments

Planetarium	£1262.19
Globes	970.16
3 Chariots	2179.17
Mathematical and philosophical instruments	196.10.17
More mathematical instruments	173.19.17
Merlin's chairs	39. 3.00
Telescopes	180. 5. 0
Measuring Instruments	425.17. 0
Chemical, electrical and philosophical apparatus	916.14. 8

Luxury Goods

Firearms (2 guns, 2 pairs of pistols, a sword and pistol)	735.00.0
Lustres and Argand Lamps	946.00.0
Curious Tables, vases and clocks from Vulliamy	420.00.0
Prints	255.14. 6
Model of the Royal Sovereign	142. 3. 2

Manufactures

Broadcloths, superfine cloth and silk	2028.12.5
Painted sallins and varnished cloths	114.14.9

Saddlery	258.14.0
Birmingham manufactures (from Boulton £320.6.0; from William & Richard Smith £163.18.6)	484. 4.
Swords	161.00.0
Sheffield manufactures	125.00.0
Copper (wrought - sheathing, rolled, copper & brass Nails, rivets, staples, bolts)	235.00.0
Tin ingots	32.18.1
Plate glass and window glass	36.0.0
Carpets	221.7.6
Stationary	340.14.1
Wedgwood Jasperware (including Wedgwood Catalogue with description of the Portland Vase)	169.17.0

Package containing specimens of various manufactures,
including pieces sent by Boulton and Smith from Birmingham No
valuation specified

Other goods

Tea samples	16.13.6
Additional goods from the Cathcart Embassy of 1787 (Guns, cutlery, mathematical instruments)	2,486. 9.6

*valuations are cost prices including packaging and transport to the EIC
warehouses.

The package of specimens of manufactures was an assortment put
together from a few places and by a few individuals. Textile samples were
gathered by the Chamber of Commerce in Leeds, but in other places by

individual manufacturers: Kellie and Burt from Bradford, John Couch from Exeter, Harvey and Co. from Norwich, Sheppard & Hicks from Gloucestershire, J. Anslie from Wiltshire, Brown, Sharp and Co. from Paisley and John Lodge from Lancashire. Harris and Son and well as Clift and Pratt provided the Coventry specimens. Birmingham specimens were provided not by Matthew Boulton, but by William and Richard Smith. The package of manufactures did, however, include a set of prices from Boulton's manufactory.⁵¹ The inventory certainly confirmed Boulton's suspicions about his unknown rival, the Smith firm; both contributed to the separate group of Birmingham goods.

The categories of mathematical, scientific and philosophical instruments contained numbers of microscopes, telescopes, thermometers, barometers, a chronometer, apothecaries' scales, a set of diamond scales, an air pump, a gold watch and various astronomical instruments. The descriptions of these give as much detail to the mahogany, japanned and glass casings with their ornamentation as they do to the instruments. The category of chemical, electrical and philosophic apparatus contained items more immediately relevant to manufacturing technology. This contained chemical apparatus, bottles and stoppers for acids, vitreous acids and sulphuric acid, magnets and magnetic apparatus, portable furnaces, a foundry, fire works, electrical machines and engines, a portable steam engine, a model of a lock, a printing press and various mathematical and optical tools.⁵² This scientific apparatus dominated the goods taken on the Embassy. It certainly conveyed the 'taste for science' in Europe, but did it convey a close integration of science and technology? The one category of chemical, electrical and philosophic apparatus did contain the items which indicated the 'shared technical vocabulary' between British engineers and

51. Ibid., p. 578.

52. Ibid., pp. 545-86.

entrepreneurs discussed by Margaret Jacob.⁵³ But otherwise, there was otherwise almost a complete separation between scientific and luxury goods on the one hand, and wider consumer and industrial products on the other.

Apart from this listing of goods, there was little to indicate the extent to which those conveying this huge assemblage of things to the other side of the world, saw themselves as conducting an industrial exhibition.⁵⁴ Nor was there a great deal recorded of the reactions of those few Chinese, apart from the Emperor, allowed access to the displays. There are a few indications in some of the journals of the voyage. Macartney wrote in his notes of reactions when some of the specimens were first opened in September. The Chinese officials who attended expressed 'admiration' and were 'much excited' by the gifts and 'specimens of different Manufactures' as well as by 'little articles of use and convenience which Europeans are accustomed to.' There was special interest in Birmingham sword blades and fine clothes, as well as musical instruments. Indeed they had drawings made of the instruments so that they could be reproduced in China. Thus, Macartney's comment 'notwithstanding their vanity and conceit, they are not above being taught.'⁵⁵

Aneas Anderson, Macartney's personal servant during the embassy recounted the unpacking of some of the presents, consisting of 'plated goods, hardware and cutlery,' and the 'Whole was divided between the Emperor and the Grand Choulai.' He reported that when the Emperor visited to inspect the presents, the artificers saw him as 'attractively affable'. Our interpreter, explained to the mandarins the

53 Margaret Jacob, *Scientific Culture and the Making of the Industrial West* (New York, 1997)

54. On early industrial exhibitions see Toshio Kusamitsu, 'Great Exhibitions before 1851', *History Workshop Journal*, 9, 1980, pp. 70-89. These first provincial exhibitions started in 1837. Much more specialized and temporary exhibitions were common from the mid eighteenth century. Robert Anderson, 'Workers and Collections', Seminar Paper to the History of Science seminar, University of Oxford, 18 May, 2004.

nature and use of a variety of articles.' The presents were generally received, but two camera obscuras were returned 'as being suited only to the amusement of children.'⁵⁶ Macartney himself only mentioned lustres, globes, the orrery, Vullliamy's clocks, figures and vases as these were put up in the Palace of Yuan-ming Yuan at the end of August, 1793. He observed the admiration of the Emperor's grandsons for the Derbyshire porcelain vases; they asked him to compare Chinese and Derbyshire porcelain. Macartney replied that the British porcelain was 'considered to be very precious of its kind', but that Chinese porcelain was also greatly valued in Britain for so much of it was imported.⁵⁷ There was no mention of the six vases sent by Wedgwood who was more than pleased to be sending his ceramics to China. He had claimed his success in turning the tables on the Chinese for over 25 years.

'The demand for his said Creamcolour...still increases. It is really amazing how rapidly the use of it has spread almost over the whole Globe...an East Indian Captain...ordered a good deal of my Ware...They told me it was already in Use there, and in much higher estimation than the finest Porcellain...Don't you think we shall have some Chinese Missionaries come here soon to learn the art of making Creamcolour.'⁵⁸

Macartney's Embassy failed. His hopes of staying in Peking much beyond the month allotted came to nought, and the Chinese hurried him out of the capital and on an overland route back to Canton. He left another letter for the Emperor again requesting more ports where the English could trade with China, a permanent warehouse in Peking and lower duties on the trade in Canton. He gained none of these, but the

55.Hevia, *Cherishing Goods*, p. 103.

56.Anaenas Anderson, *An Accurate Account of Lord Macartney's Embassy to China: carefully abridged from the Original Work with alterations and corrections by the Editor who was also an attendant on the Embassy* (London, 1797), p. 95.

57.Cranmer-Byng, *An Embassy to China*, p. 99.

58.A. Finer and G. Savage, *The Selected Letters of Josiah Wedgwood* (London, 1965), pp. 7-9.

British still did not give up, and in 1795 sent letters and ten cases of presents from the King to the Emperor via an East Indiaman going this time to Canton.⁵⁹

What does this hugely costly expedition tell us about enhancing and transferring 'useful knowledge'. It could be argued that this is not what the Embassy was about at all: tribute and presents play a purpose different than those of displays of new science and technology, industrial exhibits and trade fairs. Nevertheless there was enough in the directives of the Embassy, the rhetoric of government ministers and in the assemblage of the goods themselves to indicate that this Embassy was to convey a set of goods and displays to China distinctive from those that had been carried before. Most connected with the Embassy saw themselves as bearers of 'enlightened values' and the goods they brought as indicative of recent scientific and technological progress in Europe. The links espoused, however, between science and the arts were not carried out either in the personnel on the voyage, or in the selection of goods taken.

Joel Mokyr bases his case for an 'industrial enlightenment' on the close integration of theory and practice, on a 'useful knowledge' made up of propositional knowledge and empirical practice. Crucial to his argument is the idea of an 'open science', and of the exchange of knowledge among natural philosophers, engineers, mechanics and entrepreneurs.

The industrial revolution happened, he argues because of the close social and cultural integration among those who knew things and those who made things.⁶⁰ This optimistic perspective on the close integration of science and technology during the eighteenth century, of an

59. Morse, *The Chronicles*, vol. II, p. 225; Cranmer-Byng, 'Lord Macartney's Embassy', p. 180.

60. Mokyr, *The Gifts of Athena*, pp. 35-55, 63-74, 287-291.

enlightenment informed by empirical practice and an inventive culture is very persuasive. But at the end of the day,' did Macartney's Embassy convey this image of 'useful knowledge' not just to the Chinese ruling elite, but to the British public? I don't think so.