

The Pilgrim Art: The Culture of Porcelain in World History*

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IN 1619 Philip III of Spain made a ceremonial entrance into Lisbon, the capital of his Portuguese kingdom.¹ Among the triumphal arches he paraded under was one put up by the guild of potters that depicted Portuguese carracks unloading Chinese porcelain in the city's harbor and other ships taking aboard Portuguese imitations of the Chinese wares for export to other European countries. An inscription boasted, "Ours also go to different regions of the world." Holding up an earth-ware vase labeled "porcelains" (*porcelanas*), an allegorical figure declared:

Here most gracious Majesty
We offer you the pilgrim art

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¹ Philip III was the second of that name as monarch of Portugal: Philip II of Spain (r. 1556–98) became Philip I of Portugal in 1581 by virtue of the union of crowns that followed the death in battle of the last of the Aviz dynasty, Dom Sebastian I (r. 1557–78). See J. H. Elliot, "The Spanish Monarchy and the Kingdom of Portugal, 1580–1640," in *Conquest and Coalescence: The Shaping of the State in Early Modern Europe*, ed. Mark Green-glass (London: Edward Arnold, 1991), pp. 48–67.

Made in the Lusitanian Kingdom
 Which China sold us at such high prices!²

Philip III was familiar with Chinese porcelain, for his father Philip II had a collection of some 2,000 pieces, including several with his coat of arms, and the earthenware potters of Talavera (southwest of Madrid) had turned out blue-and-white tiles for his Escorial palace in imitation of the dominant color scheme of Chinese ceramics. Philip III saw similar tiles adorning the churches of Lisbon, while the Santos Palace of the Portuguese crown held several hundred pieces of porcelain.³

Lisbon had been a European port of entry for porcelain since 1499, when Vasco da Gama returned from his historic voyage to India with about a dozen pieces for Dom Manuel I (r. 1495–1521). After Portuguese captains reached China in 1517, the monarch had vessels commissioned for him: the earliest known piece of blue-and-white porcelain with European decoration is a ewer of 1520 with Manuel's coat of arms.⁴ The Portuguese king and his *fidalgos* thus became the first to be infected by “the contagion of China-fancy,” as Samuel Johnson caustically described it. In response to the craze for porcelain, Western merchants imported at least 70 million pieces in the seventeenth and eighteenth centuries.⁵ European princes and aristocrats succumbed to “porcelain disease” (*Porzellankrankheit*), a feverish desire to possess the Chinese ware, which they exhibited in a cabinet or arrayed in a *Porzellanzimmer*. Indeed, Europeans condemned the Chinese as “porcelain-headed extortioners” because of the treasure that went to China to pay for the imports.⁶ This was a consequence of porcelain holding a unique

² Jean McClure Mudge, “Hispanic Blue-and-White Faience in the Chinese Style,” in *Blue and White Chinese Porcelain and Its Impact on the Western World* (exh. cat.), ed. John Carswell (Chicago: David and Alfred Smith Gallery, 1985), p. 44; Robert C. Smith, *The Art of Portugal, 1600–1800* (New York: Meredith Press, 1968), p. 261.

³ Anthony Ray, “Sixteenth-Century Pottery in Castile: A Documentary Study,” *Burlington Magazine* 33 (1991): 298–305; João Castel-Branco Pereira, *Portuguese Tiles from the National Museum of Azulejo, Lisbon*, trans. Peter F. Ingham (London: Zwemmer, 1995), p. 47; Daisy Lion-Goldschmidt, “Les porcelaines chinoises du Palais de Santos,” *Arts asiatiques* 39 (1984): 5–72.

⁴ Rui Loureiro, “Portugal em busca da China: Imagens e miragens (1498–1514),” *Ler História* 19 (1990): 33; Jorge Graça, “The Portuguese Porcelain Trade with China,” *Arts in Asia* 7 (1977): 45–47.

⁵ On enthusiasm for porcelain, see J. H. Plumb, “The Royal Porcelain Craze,” in *In the Light of History* (London: Allen Lane, 1972), pp. 57–68. On porcelain imports, see Peter Wilhelm Meister and Horst Reber, *European Porcelain of the 18th Century*, trans. Ewald Osers (Ithaca, N.Y.: Cornell University Press, 1983), p. 18. For the quotation, see *The Letters of Samuel Johnson*, ed. Bruce Redford, 5 vols. (Princeton: Princeton University Press, 1992), 3:70–71.

⁶ Otto Walcha, *Meissen Porcelain* (New York: G. P. Putnam, 1981), p. 95; Meister and Reber, *European Porcelain*, p. 19.

position in trade between East and West. European merchants coveted spices, which were grown in India, Sri Lanka, and maritime Southeast Asia, and they wanted silk, which was produced in the Middle East and Central Asia as well as in China, but porcelain remained a Chinese monopoly until the early eighteenth century. In 1708 the researchers of Augustus II (the Strong), elector of Saxony and king of Poland (1670–1733), discovered the secret of porcelain manufacture—a dream of European princes for two centuries. The porcelain manufactory of Meissen brought the West into competition with China for the first time.

For over a thousand years, Chinese porcelain was the most universally admired and most widely imitated product in the world. It influenced virtually all ceramic traditions it encountered, and in some cases—most notably in maritime Southeast Asia and coastal East Africa—it displaced them altogether, thereby reaching deeply into indigenous religious and social life. Porcelain played a central role in cross-cultural exchange in the Afro-Eurasian *oikumene*, since it was the principal material vehicle for the assimilation and transmission of artistic symbols, themes, and designs across vast distances. It yields the first and most extensive physical evidence for sustained cultural encounter on a worldwide scale, perhaps even for indications of genuinely global culture. Moreover, porcelain presents striking evidence for artistic, commercial, and technological interaction between the high cultures of China and western Asia from the seventh century to the advent of the modern age at the end of the eighteenth.

The cultural impact of porcelain provides an illuminating but unexplored theme in the study of world history. Pottery in general has been a crucial source of information for archaeologists since the eighteenth century, but historical study of material culture, commodities, and consumption began only in recent decades. In particular, it is not surprising that historians have overlooked porcelain. Although there is an enormous literature on the subject, much of it is in publications rarely consulted by historians, such as exhibition catalogues, auction-house magazines, museum booklets, and art journals. Even within the realm of art history, porcelain is slighted: as one of the decorative arts, it ranks considerably below painting and sculpture, and not much above furniture and costume design. For the purpose of historical examination, however, porcelain vessels are particularly revealing, for they were often simultaneously functional wares, treasured possessions, and bearers of cultural significance; hence, the history of porcelain must be linked to changes in commerce, art, and social values. This essay attempts to place porcelain within these contexts while also relating it to some central developments in world history.

The argument proceeds in roughly chronological order, beginning with a sketch of the technology of ceramics in China from the Shang period (c. 1700–1027 B.C.E.) through the Song (960–1279), followed by an account of the development of blue-and-white porcelain in the Yuan (1279–1368) and Ming (1368–1644) dynasties. The impact of porcelain on other ceramic traditions in the ecumene is then surveyed, a theme that is continued with examination of the rise of porcelain in the West from 1500. The essay concludes with discussion of the role of porcelain in cross-cultural exchange from the Tang period (618–906) to around 1800.

THE TECHNOLOGY OF CERAMICS FROM THE SHANG TO THE SONG

China and the West categorize porcelain differently in relation to earthenware and stoneware.⁷ The contemporary view, which is based on a Western taxonomy, is that pottery encompasses all three types, ranked according to the ware's material composition and to the temperature at which it is fired in a kiln. Made from many types of clay, earthenware is formed at between 600°C and 1,000°C; if the temperature is higher than 1,000°C, the vessel will bloat and collapse in a liquid melt. The fired clay, which is red, brown, or buff, is unfused and therefore porous; it must be covered with a glaze in a second firing to become impermeable. Stoneware is produced at about 1,100°C to 1,250°C, resulting in a ceramic whose hardness lies between that of earthenware and porcelain; it is vitreous (or glassy), almost entirely nonporous, resonant when struck, and varies in color from light gray to black.

Whiteness and translucency chiefly distinguish porcelain from stoneware. The porcelain produced at Jingdezhen from around the thirteenth century was composed of china-stone (or "porcelain-stone," *cishi*) and kaolin (or china-clay).⁸ China-stone gives translucency and hardness

⁷ For basic terms in ceramics (but without unanimity regarding them), see the glossaries in the following works: *The British Museum Book of Chinese Art*, ed. Jessica Rawson (London: Thames and Hudson, 1993), pp. 361–70; David W. Kingery and Pamela B. Vandiver, *Ceramic Masterpieces: Art, Structure, and Technology* (New York: Free Press, 1986), pp. 315–24; Mary Tregear, *Song Ceramics* (London: Thames and Hudson, 1982), pp. 233–38; S. J. Vainker, *Chinese Pottery and Porcelain* (London: British Museum Press, 1991), pp. 218–25. For discussion of terms and various wares, see William Bowyer Honey, *European Ceramic Art from the End of the Middle Ages to about 1815*, 2 vols. (London: Faber and Faber, 1949). For ease of exposition, some technical material will be placed in the notes.

⁸ Petunse (*baidunzi*) appears in most descriptions of porcelain as the term for the processed white briquettes of china-stone used in the manufacturing process. Originally potters' slang, it is now regarded as an inappropriate term in porcelain studies. See John

to the porcelain paste but is difficult to work with by itself; kaolin softens the paste, providing plasticity, smoothness, and whiteness.⁹ The two components fuse to form a single mass when heated to above 1,300°C, undergoing a process of vitrification that renders the finished product resonant, wholly impermeable, very white, and translucent when thin. In terms of fusion of material, china-stone and kaolin that are fired below 1,000°C make earthenware; fired below 1,300°C, they produce stoneware. Since porcelain and stoneware are both high-fired wares, they are glazed merely to improve their appearance, not because they are porous.¹⁰

Earthenware, stoneware, and porcelain are regarded as distinct categories in the West (and in all modern studies). The Chinese, however, traditionally recognize only two groupings, earthenware and *ci*, the latter including both stoneware and porcelain. Of course, the Western classification of stoneware and porcelain makes sense in terms of chemical and physical analysis inasmuch as there are genuine differences in mineral ingredients and material formation between the two ceramics. When the scientific categories are employed in historical narrative, however, they result in considerable confusion. Depending upon which modern account one reads, porcelain emerged in any one of the periods of Chinese history from the Zhou (1027–221 B.C.E.) to the Yuan.¹¹ The terms *proto-porcelain*, *quasi-porcelain*, and *porcellaneous stoneware* often are used to identify pottery made with some of the

Addis, "Porcelain-Stone and Kaolin: Late Yuan Developments at Hutian," *Transactions of the Oriental Ceramics Society* 45 (1980–81): 62 (journal hereafter cited as TOCS). The term *kaolin* derives from Kaoling (High Ridge) near Jingdezhen, where the china-clay was mined and processed.

⁹ There are two main kinds of kaolin, secondary and primary. The former is a product of lengthy sedimentary transport and deposition and therefore contains impurities that reduce its firing range. Ceramics of the Song period generally were made from secondary kaolin. The china-clay used at Jingdezhen was primary kaolin. Inasmuch as Jingdezhen is the only place where china-stone is found in association with primary kaolin, that pottery center had a unique advantage in developing a formula for a ceramic of the highest quality. See Vainker, *Chinese Pottery and Porcelain*, pp. 218–19.

¹⁰ On the manufacture of porcelain, see Rollo Charles, *Continental Porcelain of the Eighteenth Century* (London: Ernest Benn, 1964), pp. 22–31. For a useful graph of firing ranges and materials, see Adrian Malcolm Joseph, *Ming Porcelains: Their Origins and Development* (London: Bibelot, 1971), p. 10.

¹¹ For example, see Li Jiazhī, "The Evolution of Chinese Pottery and Porcelain Technology," in *Ceramics and Civilization: Ancient Technology to Modern Sciences*, ed. W. D. Kingery (Columbus, Ohio: American Ceramic Society, 1984), p. 135; Robert Temple, *The Genius of China* (New York: Simon and Schuster, 1986), p. 92; Philip Wen-Chee Mao, "Early Blue and White," *Oriental Art* 23 (1977): 333; Sherman E. Lee, *A History of Far Eastern Art* (New York: Harry N. Abrams, 1982), p. 286; Margaret Medley, *Yuan Porcelain and Stoneware* (London: Pitman, 1974), p. 14.

ingredients of porcelain and sharing some of its physical characteristics, centuries before the emergence of supposed "true porcelain" at Jingdezhen in the Yuan dynasty.¹²

The Chinese category of *ci* for both porcelain and stoneware has the virtue of avoiding such otiose terminology, albeit at the price of ignoring real distinctions between the two ceramics. In fact, the variant classifications of porcelain reflect significant differences between the ceramic experiences of China and the West. High-fired wares (or *ci*) defined the ceramic history of China for some 1,600 years before Jingdezhen porcelain appeared in the thirteenth century. Grouping porcelain with stoneware was natural since the new material resulted from incremental change within an established tradition, mainly a matter of adjusting the proportion of known ingredients. Because porcelain vessels, in their hardness, resonance, and impermeability, seemed indistinguishable from stoneware, potters had every reason to regard the new Jingdezhen product as just another, improved variety of *ci*. In Europe, earthenware defined the pottery tradition until the arrival of Chinese porcelain, which westerners subsequently investigated to learn how to manufacture the ceramic for themselves. Their research resulted in the contemporary scientific taxonomy.¹³ In other words, Europeans in the early modern period analyzed the nature of porcelain because of its novelty, while the Chinese in the thirteenth century simply regarded the material as a natural extension of their ancient craft of high-quality ceramics.

The most striking contrast between China and the West in the history of pottery is that the former was about two millennia ahead of the latter in the manufacture of high-fired wares. The foundation for this precocious achievement lies in the geology of the Tibetan plateau and Gobi desert. Beginning more than a million years ago, loess from those regions blanketed the plains of northern China. This fine rock dust, produced by the weathering of igneous stone, was blown southeast to form a topsoil as much as 300 meters deep in places. Loess (*huangtu*, or

¹² In part, this nomenclature is a consequence of trying to account historically for wares being made variously from secondary kaolin, naturally kaolinized china-stone, and china-stone mixed with processed primary kaolin. See M. S. Tite, I. C. Freestone, and M. Bimson, "A Technological Study of Chinese Porcelain of the Yuan Dynasty," *Archaeometry* 26 (1984): 139–54.

¹³ The category of stoneware emerged by a kind of back-formation: having identified the particular physical characteristics of porcelain, westerners necessarily recognized those of stoneware as well. Some stoneware was made in the Rhineland from around the fourteenth century, but since it had slight currency in Europe, it provoked no special interest or investigation. See F. A. Dreier, "Stoneware in Germany," in *World Ceramics*, ed. Robert J. Charleston (London: Paul Hamlyn, 1968), pp. 129–33.

“yellow earth”) gave the Yellow River its name, and it provided the raw material for the 7,000 terra-cotta warriors buried with Qin Shi-huang, founder of the Qin empire (221–207 B.C.E.).¹⁴ The development of Chinese ceramics depended on loess in two respects. First, since it consists mainly of quartz, loess has a high melting point and therefore made superb material for high-temperature kilns. Second, since it has a very low clay content and thus does not shrink during drying and firing, it proved ideal for making ceramic piece molds for casting the bronze weapons and ritual bronze vessels that emerged during the Shang dynasty.¹⁵

Employment of loess for ceramic molds meant that pottery and metallurgy developed together in China. In western Asia, metal objects were first made by being pounded out with a hammer and anvil as part of a smithy tradition. In China, the earliest metal artifacts came out of a ceramic context, in which the potter’s piece molds determined the shape and ornamentation of bronze implements.¹⁶ Loess soil and the early predominance of ceramics in metallurgy also impelled Chinese craftsmen toward a highly effective kiln technology. In ancient Mesopotamia, potters modeled their kilns on smelting furnaces, in which the smithy strives to keep the metal and fuel in close contact with each other: thus, they built kilns of brick from the ground up, with large fireboxes directly beneath the pots, producing a uniform but modest temperature (of about 1,000°C). The potter, however, achieves the best results by separating pots from the source of heat in the kiln. In the loess soil of China, all that artisans had to do was excavate a chamber in rising ground, tamp the walls, and create a vent to the surface; the sandy soil provided excellent insulation, and an effective chimney gave a good draft and a strong flame.¹⁷ Some 10 meters in

¹⁴ On loess, see Gideon S. Golany, *Chinese Earth-Sheltered Dwellings* (Honolulu: University of Hawai‘i Press, 1992), pp. 14–21.

¹⁵ On loess and ceramics, see Pamela B. Vandiver, “Ancient Glazes,” *Scientific American* 262 (1990): 110; S. Vainker, “Ceramics for Use,” in *The British Museum Book of Chinese Art*, p. 215; Kingery and Vandiver, *Ceramic Masterpieces*, p. 33. On Shang bronzes and ceramics, see Jessica Rawson and Emma C. Bunker, *Ancient China and Ordos Bronzes* (Hong Kong: Oriental Ceramic Society, 1990).

¹⁶ Noel Barnard, “The Role of the Potter in the Discovery and the Development of Metallurgy in Ancient China—with Particular Reference to Kiln and Furnace Construction,” *Bulletin of the Oriental Ceramic Society* 2 (1976): 1–33.

¹⁷ Ursula Martius Franklin, “The Beginnings of Metallurgy in China: A Comparative Approach,” in *The Great Bronze Age in China*, ed. George Kuwayama (Los Angeles: Los Angeles County Museum of Art, 1983), pp. 94–99; Vandiver, “Ancient Glazes,” p. 110. See also Henry Hodges, “Interaction between Metalworking and Ceramic Technologies in the T’ang Period,” in *Pottery and Metalwork in T’ang China*, ed. William Watson (London: Percival David Foundation of Chinese Art, 1970), pp. 64–67.

length, the "dragon kilns" (*long*) of the Han period (206 B.C.E.–220 C.E.) in southern China used the natural slope of the hillside to produce a natural draft that raised the firing temperature higher than European kilns could obtain before the nineteenth century. By the Song period, multichamber dragon kilns stretched up hillsides as much as 60 meters and could fire more than 50,000 pieces at a time over several days.¹⁸

This kiln technology led to the finest achievements of Chinese pottery. As far back as the Shang period, craftsmen used kaolin for making ceramics, although their kilns generally fell somewhat short of the temperature needed to move beyond earthenware. In the Zhou period, with better kilns, potters fired their kaolinic wares at about 1,250°C, making them hard, almost nonporous, and resonant.¹⁹ Long before the first centuries of the Common Era, then, the most advanced Chinese ceramic was no longer earthenware but some kind of *ci*. By the Song period, the earthenware tradition was defunct, while high-fired wares were increasingly diverse, in large part because of the numerous pottery centers in China.

Ceramic variety also stemmed from kiln technology. The structure of the tunnel-like kilns meant that there were temperature differences of as much as 600°C between the firebox in the lower area and the chimney in the upper. In a single operation, high-fired wares could be produced in the lower chambers and earthenware in the top. In order to use all parts of the kiln and thereby reduce the enormous expense of firing with wood fuel, potters experimented with kaolin and china-stone, mineral substances that were chemically unique in withstanding the hottest portion of the kiln.²⁰ This resulted in vessels that were whiter and harder than those previously made—a much desired effect, since it allowed ceramics to imitate the pale shades and thin body of silverwork vessels, a medium introduced to China from western Asia in the Tang period.²¹

¹⁸ Kingery and Vandiver, *Ceramic Masterpieces*, p. 77; Li Jiazhī, "The Evolution of Chinese Pottery and Porcelain Technology," pp. 143–48.

¹⁹ William Watson, *Pre-Tang Ceramics of China: Chinese Pottery from 4000 B.C. to 600 A.D.* (London: Faber and Faber, 1991), p. 175; Clarence F. Shangraw, *Origins of Chinese Ceramics* (exh. cat.) (New York: China Institute in America, 1978), pp. 43, 45; Cécile Beurdeley and Michel Beurdeley, *A Connoisseur's Guide to Chinese Ceramics*, trans. Katherine Watson (New York: Alpine Fine Arts Collection, 1984), pp. 26, 42.

²⁰ William Willetts, *Chinese Art*, 2 vols. (New York: George Braziller, 1958), 2:410–11.

²¹ Jessica Rawson, "Song Silver and Its Connexions with Ceramics," *Apollo* 120 (1984): 18–23. See Margaret Medley, "T'ang Gold and Silver," in *Pottery and Metalwork in T'ang China*, pp. 19–26.

In addition, the long cooling period required for the large kilns sometimes produced bluish green shades on the glazed wares as a result of excess carbon monoxide in the chambers. This revealed to Song potters that striking effects of depth, brightness, and opalescence could be achieved by controlling the kiln atmosphere.²² The Chinese prized vessels with bluish green glazes because the surfaces resembled the colors of jade, a material of enormous ceremonial and symbolic significance in China. More prosaically, an eighteenth-century Chinese connoisseur praised Song glazes for being “as transparent and thick as massed lard.”²³ The lavish glazes on Song ceramics meant that most pieces were monochromatic; the potters decorated them by incision of the glaze or ceramic body rather than by the use of pigments. Judging by the variety and excellence of their vessels, Song potters had an impressive practical understanding of aesthetic effects, kiln technology, and ceramic chemistry.²⁴ Their whitewares and greenwares (or celadons) are generally considered the finest achievement in the history of ceramics.²⁵

In the Song period, the most prestigious kilns producing whitewares were located in Hebei Province in northern China, and those manufacturing the best greenwares were at Longquan in Zhejiang Province on the southeastern coast; both kinds of *ci* usually were made with a variety of kaolin. At first a relatively minor pottery center, Jingdezhen produced wares made only of china-stone. From the tenth century the main line of production was known as *qingbai* (bluish white). These were small, thin vessels with a fine white body and a blue-tinted transparent glaze. *Qingbai* had limited circulation in China, but mer-

²² Kingery and Vandiver, *Ceramic Masterpieces*, p. 107.

²³ Stephen Bushell, *Description of Chinese Pottery and Porcelain: Being a Translation of the T'ao Shuo* (Oxford: Clarendon Press, 1910), p. 64. On the significance of jade, see Jessica Rawson, *Chinese Jade from the Neolithic to the Qing* (London: British Museum Press, 1995).

²⁴ P. Vandiver and W. D. Kingery, “Variations in the Microstructure and Microcomposition of Pre-Song, Song, and Yuan Dynasty Ceramics,” in *Ceramics and Civilization*, p. 218; Robert D. Mowry, “Chinese Brown- and Black-Glazed Ceramics: An Overview,” in *Hare's Fur, Tortoiseshell, and Partridge Feathers: Chinese Brown- and Black-Glazed Ceramics, 400–1400* (exh. cat.) (Cambridge, Mass.: Harvard University Art Museums, 1996), pp. 23–42; John Ayers, Margaret Medley, and Nigel Wood, eds., *Irons in the Fire: The Chinese Potter's Exploration of Iron Oxide Glazes* (exh. cat.) (London: Oriental Ceramic Society, 1988).

²⁵ Tregear, *Song Ceramics*, pp. 7–48; Margaret Medley, *The Chinese Potter: A Practical History of Chinese Ceramics* (Oxford: Phaidon, 1976), pp. 103–68. There is no agreement on the origins of the term *celadon*. It may be derived from a character in a seventeenth-century French novel who wore ribbons of a pale green color (Beurdeley, *A Connoisseur's Guide to Chinese Ceramics*, p. 94). The preferred usage is now *greenware*.

chants shipped large quantities to maritime Southeast Asia, and some reached the Middle East.²⁶

By the last years of the Song dynasty, however, the china-stone at Jingdezhen was being mined from deep deposits that lacked aluminium oxide, the chemical ingredient that allowed the mineral to withstand high firing. To preserve the quality of their product, the Jingdezhen potters began adding kaolin to the china-stone, thereby restoring the percentage of aluminium oxide required.²⁷ This was a turning point in the history of pottery, for the new formula proved vastly superior to the use of china-stone alone. The addition of kaolin permitted the potters to raise the temperature for firing in the kiln to above 1,300°C. This led to fusion (or vitrification) of the china-stone and kaolin, greatly enhancing the translucency, whiteness, and hardness of the finished product. The snow-white brilliance of the porcelain presented new potential for decoration, while its strength meant that larger, more elaborate vessels could now be produced.²⁸ The potters of Jingdezhen had invented a material with which they would change ceramic traditions around the world. Those transformations began, however, only after they had adopted a significant innovation from the earthenware craftsmen of the Middle East.

THE DEVELOPMENT OF BLUE-AND-WHITE PORCELAIN IN THE YUAN AND MING

Blue-and-white porcelain developed as a long-term consequence of the impact of Song ceramics on the Middle East. The Middle East and India were the great areas of consumption in the ecumene; precious metal, spices, and manufactured goods found their best markets there.²⁹

²⁶ Guo Yanyi, "Raw Materials for Making Porcelain and the Characteristics of Porcelain Wares in North and South China in Ancient Times," *Archaeometry* 29 (1987): 3–6; Chen Baiquan, "The Development of Song Dynasty Qingbai Wares from Jingdezhen," in *The Porcelains of Jingdezhen*, ed. R. Scott (London: Percival David Foundation, 1993), pp. 13–32. *Qingbai* also was known as *yinqing* (shadow-blue).

²⁷ Peter Y. K. Lam, "Jingdezhen Wares of the Yuan Dynasty," *Orientations* 15 (1984): 18–19; Tite, Freestone, and Bimson, "A Technological Study of Chinese Porcelain of the Yuan Dynasty," pp. 139–54. On china-stone and kaolin at Jingdezhen, see note 9 above.

²⁸ Lam, "Jingdezhen Wares of the Yuan Dynasty," p. 22. For technical reasons having to do with glazing compounds, the glaze also lost its blue tint around the same time.

²⁹ K. N. Chaudhuri, *Trade and Civilisation in the Indian Ocean: An Economic History from the Rise of Islam to 1750* (Cambridge: Cambridge University Press, 1985), pp. 39, 184–85; Jack Goody, *The East in the West* (Cambridge: Cambridge University Press, 1996), pp. 82–97. As discussed below, however, Hindu prohibitions regarding ceramics strictly limited the market for porcelain in India.

Whitewares and greenwares were exported by ship to Egypt and Persia from as early as the ninth century, probably by Muslim merchants in the port cities of Guangzhou (Canton) and Quanzhou.³⁰ Porcelain greatly inspired the potters of the Middle East, as is shown by hundreds of thousands of earthenware shards in Egypt, Syria, and Persia.³¹ Maritime export of ceramics increased considerably after the Liao state of the Qidan (907–1125) and then the Jin state of the Jurchen (1115–1234) cut off northern China from contact with Central Asia. As population mushroomed in the southeastern coastal provinces of Zhejiang, Fujian, and Guangdong, China turned decisively toward the sea. The government of the Southern Song (1127–1279) came to depend on maritime trade for at least 20% of its cash income, and manufacturers of porcelain (along with those of other commodities) dramatically stepped up production to meet demand from foreign markets.³²

Given its population of well over 100 million in the late twelfth century, as well as the attractions of its manufactured products, China exerted enormous leverage when it committed itself to the wider world. The overseas reach of the vast Chinese economy intensified ancient patterns of trade and cultivation throughout Southeast Asia and the countries of the Indian Ocean. It caused an upsurge of activity in marketplaces as distant as the merchant republics of Italy, which from the eleventh century flourished on trade in Asian spices. With China as its center, an economic system emerged for the first time to encom-

³⁰ David Whitehouse, “Abbasid Maritime Trade: Archaeology and the Age of Expansion,” *Rivista degli studi orientali* 59 (1987): 346–47; Peter Y. K. Lam, “Northern Song Guangdong Wares,” in *A Ceramic Legacy of Asia’s Maritime Trade*, ed. Southeast Asian Ceramic Society (Singapore: Oxford University Press, 1985), p. 9; Jessica Rawson, M. Tite, and M. J. Hughes, “The Export of Tang *Sancai* Wares: Some Recent Research,” *TOCS* 52 (1987–88): 39–58. On Muslim merchants in Quanzhou, see Hugh P. Clark, “Muslims and Hindus in the Culture and Morphology of Quanzhou from the Tenth to the Thirteenth Century,” *Journal of World History* 6 (1995): 49–74.

³¹ Tsugio Mikami, “China and Egypt: Fusat,” *TOCS* 45 (1980–81): 67–89; George T. Scanlon, “Egypt and China: Trade and Imitation,” in *Islam and the Trade of Asia*, ed. D. S. Richards (Philadelphia: University of Pennsylvania Press, 1970), pp. 85–88; Moira Tempoe, *Maritime Trade between China and the West: An Archaeological Study of the Ceramics from Siraf (Persian Gulf)*, 8th to 15th Centuries A.D. (Oxford: BAR International Series, 1989), pp. 47–68.

³² On maritime activity, see Jung-pang Lo, “The Emergence of China as a Sea Power during the Late Sung and Early Yuan Periods,” *Far Eastern Quarterly* 11 (1952): 91–105; “Chinese Shipping and East-West Trade from the Tenth to the Fourteenth Century,” *Sociétés et compagnies de commerce en Orient et dans l’Océan Indien* (Paris: SEVPEN, 1970), pp. 167–74. On expansion of ceramic production, see So Kee Long, “The Trade Ceramics Industry in Southern Fukian during the Song,” *Journal of Sung-Yuan Studies* 24 (1994): 1–19.

pass almost the entire ecumene.³³ Furthermore, the effects of Chinese commercial expansion to the southern seas were reinforced from the thirteenth century by the spread of Islam into maritime Asia. Muslim traders from the regions of the Persian Gulf and the Indian Ocean, especially from Gujarat and the Coromandel coast, established themselves along the littorals of Asia, where they provided a cultural foundation for an extensive commercial network.³⁴

The growth of Chinese seaborne commerce particularly benefited the pottery industry, since ceramics are fragile, bulky, and heavy, thus far easier to transport by ship than by camel or cart. Commodities high in value and low in bulk (such as gemstones and musk oil), as well as those high in value and relatively uncomplicated to transport (such as silk and incense wood), were always the principal merchandise on the silk road, which traversed some 8,000 kilometers from the Yellow River to the Mediterranean. But with inauguration in the Song period of the "ceramic route" to western Asia, a maritime equivalent of the ancient caravan trail, porcelain became a preferred bulk export of high value.³⁵ The great expansion of trade ceramics certainly led to a lowering of costs to consumers in the Middle East. A merchant of Guangzhou in the twelfth century reported that when ships left the harbor, "the greater part of the cargo consists of pottery, the small pieces packed in the larger, till there is not a crevice left."³⁶

Chinese whitewares and greenwares came as a revelation to the Middle East. Compared to Egyptian and Persian pottery, porcelain seemed to have a jewellike, magical quality. Writing in 851, an Arab merchant named Sulayman marveled that porcelain vessels have "the

³³ William H. McNeill, *The Pursuit of Power: Technology, Armed Force, and Society since A.D. 1000* (Chicago: University of Chicago Press, 1982), pp. 53–55; Janet L. Abu-Lughod, *Before European Hegemony: The World System A.D. 1250–1350* (Oxford: Oxford University Press, 1989), pp. 317–22, 347–48.

³⁴ See Marshall G. S. Hodgson, *The Venture of Islam: Conscience and History in a World Civilization*, vol. 2, *The Expansion of Islam in the Middle Periods* (Chicago: University of Chicago Press, 1974), pp. 532–51; Fernand Braudel, *Civilization and Capitalism: 15th–18th Century*, vol. 3, *The Perspective of the World*, trans. Siân Reynolds (New York: Harper and Row, 1984), pp. 526–27.

³⁵ K. K. Kwan, "Canton, Pulau Tioman, and Southeast Asian Maritime Trade," in *A Ceramic Legacy of Asia's Maritime Trade*, ed. Southeast Asian Ceramic Society (Singapore: Oxford University Press, 1985), p. 49. On the development and importance of the silk road, see Philip D. Curtin, *Cross-Cultural Trade in World History* (Cambridge: Cambridge University Press, 1984), pp. 93–96; Jerry H. Bentley, "Cross-Cultural Interaction and Periodization in World History," *American Historical Review* 101 (1996): 761–62.

³⁶ Quoted in John Carswell, "Chinese Ceramics from Allaipiddy in Sri Lanka," in *A Ceramic Legacy of Asia's Maritime Trade*, p. 33.

transparency of glass bottles; water in these vases is visible through them—and yet they are made of clay!”³⁷ Middle Eastern potters aspired to imitate the Chinese imports, but given their natural resources and technology, they faced formidable obstacles. Because of impurities, the clays of the Middle East could not fire beyond 1,000°C, which naturally was also the temperature limit of kilns in the region.³⁸ Potters developed a ceramic body made of ground glass and white clay, but the brittle vessels that resulted looked unsatisfactory next to the real thing. A far more successful technique was pioneered by Egyptian craftsmen of the Fatimid dynasty (908–1171) and developed further in Seljuk Persia (c. 1040–1220) by potters at Rayy and Kashan: the effect of Song whiteware was simulated by adding tin oxide as an opacifier to a clear glaze, thus covering up the brownish tones of the earthenware with a soft, matte white.³⁹

Beyond the technical difficulties of imitation, however, Middle Eastern potters also faced an aesthetic problem. The sober, monochromatic nature of Song ceramics ran counter to an ancient tradition of color and decoration on Middle Eastern glass and pottery.⁴⁰ Around 4500 B.C.E. Egyptian craftsmen colored artificial gemstones a clear blue by using cobalt oxide, and glassmakers in Mesopotamia tinted their wares with cobalt about 2,000 years later. In the ninth century C.E. Persian potters used cobalt to color glazes as well as to paint over them.⁴¹ Sometime in the twelfth century they began painting designs in cobalt blue on the white background of their tin-glazed products. The proper

³⁷ Quoted in Temple, *The Genius of China*, p. 91; see *Voyage du marchand arabe Sulayman en Inde et en Chine*, rédigé en 851, trans. Gabriel Ferrand (Paris: Editions Bossard, 1992).

³⁸ Ahmad Y. Al-Hasan and Donald R. Hill, *Islamic Technology* (Cambridge: Cambridge University Press, 1986), pp. 169–70; Kingery and Vandiver, *Ceramic Masterpieces*, p. 40. Middle Eastern pottery had a very complex development that cannot be dealt with here. See Helene Philon, *Early Islamic Ceramics: Ninth to Late Twelfth Centuries* (London: Islamic Art Publications, 1980); Alan Caiger-Smith, *Lustre Pottery: Technique, Tradition, and Innovation in Islam and the Western World* (London: Faber and Faber, 1985).

³⁹ Alan Caiger-Smith, *Tin-Glaze Pottery in Europe and the Islamic World: The Tradition of 1000 Years in Maiolica, Faience, and Delftware* (London: Faber and Faber, 1973), pp. 45–46. See also R. B. Mason and M. S. Tite, “The Beginning of Tin-Opacification of Pottery Glazes,” *Archaeometry* 39 (1997): 41–58. For an early fourteenth-century account of ceramic manufacture in Persia, see J. W. Allan, *Abu'l-Qasim's Treatise on Ceramics* (Oxford: Ashmolean Museum, 1973).

⁴⁰ Marina D. Whitman, “Persian Blue-and-White Ceramics: Cycles of Chinoiserie,” 2 vols. (Ph.D. diss., New York University, 1978), 1:25.

⁴¹ Kingery and Vandiver, *Ceramic Masterpieces*, pp. 9, 53; Harry Garner, *Oriental Blue and White* (London: Faber and Faber, 1970), pp. xviii–xix. Craftsmen concentrated on cobalt oxide as a coloring agent because it was readily obtained in Persia and withstood firing in a kiln far better than other oxides.

effect was hard to achieve, however, because the blue decoration tended to run in the kiln.⁴²

Although exact dates cannot be established, it is clear that significant changes took place during the same centuries in the two great ceramic traditions of the ecumene. In China, craftsmen at Jingdezhen experimented with a new formula for their *qingbai* wares, while in the Middle East, under the influence of Song imports, potters created an innovative glaze and explored new techniques of decoration. These developments eventually came together as a result of one of the great cataclysms of history. In 1219 the Mongols launched their invasion of Persia. Along with much else in Persian cultural life, the potteries of Rayy disappeared, and those at Kashan subsided into provincialism.⁴³ After the Southern Song fell to the Mongols in 1279, the nomadic conquerors ruled an empire that stretched from Russia to the Pacific. In 1271 Marco Polo began his journey to China on the silk road, and seventeen years later he took ship from Quanzhou to return to Venice by way of Vietnam, Java, India, and Persia. His Chinese sojourn is the most famous example of the intense cross-cultural exchange that flowed from the great Mongol conquests.⁴⁴ Building on Song achievements, China under the Yuan dynasty of the Mongols became even more closely linked with overseas regions, often through Muslim government officials and traders. Chinese merchants competed for seaborne commerce with Indians and Persians, and Chinese junks sailed the Indian Ocean.⁴⁵ Naturally, the ships carried large amounts of porcelain.

Entrepreneurs and craftsmen in China and the Middle East in the thirteenth and early fourteenth centuries engaged in a remarkable collaboration that brought the ceramic traditions of the two regions closer together than ever before. As part of an international trading diaspora,

⁴² Medley, *The Chinese Potter*, p. 177; Hodges, "The Technical Problems of Copying Chinese Porcelains in Tin Glaze," in *The Westward Influence of the Chinese Arts from the 14th to the 18th Century* (London: Percival David Foundation of Chinese Art, 1973), pp. 79–87.

⁴³ Arthur Lane, *Later Islamic Pottery*, 2nd ed. (London: Faber and Faber, 1971), pp. xiv, 6–8; David Whitehouse, "Maritime Trade in the Gulf: The 11th and 12th Centuries," *World Archaeology* 14 (1983): 328–34; Caiger-Smith, *Tin-Glaze Pottery*, p. 44.

⁴⁴ See Jerry H. Bentley, *Old World Encounters: Cross-Cultural Contacts and Exchanges in Pre-Modern Times* (Oxford: Oxford University Press, 1993), pp. 141–49; Thomas T. Allsen, "Ever Closer Encounters: The Appropriation of Culture and the Apportionment of Peoples in the Mongol Empire," *Journal of Early Modern History* 1 (1997): 2–23.

⁴⁵ Jung-pang Lo, "The Emergence of China as a Sea Power during the Late Sung and Early Yuan Periods," p. 95; and "Chinese Shipping and East-West Trade from the Tenth to the Fourteenth Century," p. 170.

Muslim merchants in Quanzhou provided the initiative. On the one hand, they knew about the market for high-quality pottery in the Middle East as well as about the frustrating attempts by Persian potters to use cobalt in ceramic decoration. On the other hand, they recognized that the Jingdezhen potters had developed an improved ceramic body that offered an ideal surface for decoration and sufficient strength to replicate in pottery the massive metal basins and platters that people in the Middle East used as standard utensils.⁴⁶ Moreover, the homes of the Quanzhou merchants were famed for their riches, filled with Middle Eastern metalwork that could serve Chinese potters as models, along with carpets and textiles as sources of Islamic design. To experiment with cobalt oxide for decoration, they could even provide the potters with samples of the ore, which was sold as a medicine in Muslim apothecary shops. The Jingdezhen craftsmen found that the viscosity of their glazes prevented the cobalt from diffusing during firing, thereby allowing the most intricate designs to be executed in blue on white.⁴⁷

For many decades to come, the Quanzhou merchants imported substantial quantities of processed cobalt oxide (or smalt) from Persia to China, where it was a jealously guarded industrial asset at Jingdezhen, known as *huihui qing* (Muslim blue) and *sumali qing* (from the Arabic *samawi*, “sky-colored”).⁴⁸ The scale and far-reaching nature of the enterprise—refined ore shipped over 6,000 kilometers from the Middle East to China, customized wares manufactured in bulk at Jingdezhen for Islamic markets—were unprecedented in world history, and provide striking evidence of commercial and technological interaction in the ecumene during the years of the Pax Mongolica and after.

It was also a highly profitable venture. The Muslim merchants of Quanzhou probably were responsible for the great investment of capital that transformed the privately owned kilns of Jingdezhen into well-organized industrial complexes controlled by commercial syndicates. The transformation was inadvertently reinforced in the Ming period

⁴⁶ Margaret Medley, “Chinese Ceramics and Islamic Design,” in *The Westward Influence of the Chinese Arts*, pp. 2–3; *The Chinese Potter*, pp. 170–71; Addis, “Porcelain-Stone and Kaolin,” pp. 58–60; Adrian Joseph, “The Mongol Influence on Blue-and-White Porcelain,” in *Jingdezhen Wares: The Yuan Evolution* (Hong Kong: Oriental Ceramic Society of Hong Kong, 1985), pp. 44–49.

⁴⁷ Medley, “Chinese Ceramics and Islamic Design,” p. 2; Garner, *Oriental Blue and White*, p. 2.

⁴⁸ Clarence F. Shangraw, “Fifteenth Century Blue-and-White Porcelain in the Asian Art Museum of San Francisco,” *Orientations* 16 (1985): 34–46; Liu Xinyuan, “Yuan Dynasty Official Wares from Jingdezhen,” in *The Porcelains of Jingdezhen*, pp. 36–37. On varieties of cobalt and their sources, see He Li, *Chinese Ceramics* (New York: Rizzoli, 1996), pp. 211–12.

by a new tax system (called the “single whip”), which commuted labor services by peasants to silver payments, thereby creating a flexible work force for the pottery center.⁴⁹ By the sixteenth century, the changes that had begun in the late Yuan period had made Jingdezhen the largest industrial operation in the world, with over 1,000 kilns, 70,000 workers, and a production process that anticipated modern methods of assembly-line manufacture. A sophisticated division of labor made possible improvement of quality along with a great increase in production. Always insistent on the finest wares, the imperial court ordered as many as 105,000 pieces of porcelain at a time. Père François Xavier d’Entrecolles, a Jesuit who visited Jingdezhen in the early eighteenth century, declared that “one thinks that the whole city is on fire, or that it is one large furnace with many vent holes.”⁵⁰

Jingdezhen first decorated porcelain in blue and white around the beginning of the fourteenth century. Until the last part of the century, potters made it mainly for export to the Middle East and Southeast Asia; it seemed vulgar and ostentatious to a domestic market accustomed to austere Song whitewares and greenwares. Blue-and-white porcelain finally won over the imperial court under the Xuande emperor (r. 1426–35) of the early Ming period. By that time, the taste of the elite had been educated to regard painted decoration on ceramics as more significant and pleasing than glaze tone or body shape.⁵¹ In effect, by thus applying the standards of expressive painting to pottery and rejecting those of sculpture, the Chinese adopted the traditional aesthetic values of the Middle East.

Jingdezhen produced huge quantities of blue-and-white porcelain for export. The potters turned out utensils—such as large dishes, wine

⁴⁹ Margaret Medley, “Trade, Craftsmanship, and Decoration,” in *Seventeenth-Century Chinese Porcelain from the Butler Family Collection* (exh. cat.) (Alexandria, Va.: Art Services International, 1990), pp. 12–13. On the taxation system, see Liang Fang-chung, *The Single Whip Method of Taxation in China* (Cambridge, Mass.: Harvard University Press, 1956). On the importance of China and silver in the Ming period, see Dennis O. Flynn and Arturo Giráldez, “Born with a ‘Silver Spoon’: The Origin of World Trade in 1571,” *Journal of World History* 6 (1995): 201–21.

⁵⁰ “The Letters of Père d’Entrecolles,” translated in Robert Tichane, *Ching-te-chen: Views of a Porcelain City* (New York: New York State Institute for Glaze Research, 1983), p. 60. The letters are available in the original French in Bushell, *Description of Chinese Pottery and Porcelain*, pp. 181–222. On the organization of Jingdezhen, see Michael Dillon, “Jingdezhen as a Ming Industrial Center,” *Ming Studies* 6 (1978): 37–44.

⁵¹ Medley, *The Chinese Potter*, pp. 178–91; Duncan Macintosh, “Beloved Blue and White: An Introduction to the Porcelains of the Yuan and Ming Dynasties,” *Orientations* 4 (1973): 36–38. On the close relationship between scroll painting and porcelain painting in the Yuan period, see Roderick Whitfield, *Fascination of Nature: Plants and Insects in Chinese Painting and Ceramics of the Yuan Dynasty (1279–1368)*, 2 vols. (Seoul, Korea: Yekyong Publications, 1993).

jars, ewers, tankards, gourd-shaped bottles, basins, platter stands, and massive vases—that were alien to Chinese taste.⁵² They decorated many items with designs from Islamic culture, such as arabesques, vine-and-leaf motifs, and renditions of Arabic calligraphy. But although they had been converted to the Middle Eastern cause of painted decoration, the Chinese generally drew upon their own traditional kaleidoscopic repertoire for compositions, mainly plant forms (including the peony, lotus, camellia, and morning glory), animal forms (such as the phoenix, dragon, heron, and peacock), and scores of auspicious emblems from Buddhism and Daoism.⁵³

Indeed, the 200 years from the appearance of blue-and-white porcelain to the sixteenth century witnessed a remarkable encounter and accommodation between the two great calligraphic and design traditions of the ecumene.⁵⁴ Since those traditions had developed largely in isolation from each other, they embodied quite different aesthetic values. The Islamic approach emphasized symmetry, mathematically organized space, rectilinear patterns, and detailed enrichment of surface. Chinese conventions stressed asymmetry, a flowing sense of space, naturalism, curvilinear patterns, and rotating directional designs (such as cloud, wave, and lotus scrolls). The contrast is epitomized by Islamic metalwork embellished with interlocking units of Kufic script and a Chinese painting of cranes flying toward the edge of a frame. The two traditions learned from each other, however. Egyptian, Syrian, and Persian potters, when they began copying Chinese blue-and-white patterns in the fifteenth century, slowly adopted a more liberated sense of movement and space, opening up their designs to some of the spontaneity and dynamism that characterized the Chinese tradition.⁵⁵ In

⁵² John Ayers, "Some Characteristic Wares of the Yuan Dynasty," *TOCS* 29 (1954–55): 69–83; Feng Xianming, "Yongle and Xuande Blue-and-White Porcelain in the Palace Museum," *Orientations* 18 (1987): 56–71.

⁵³ Medley, *The Chinese Potter*, pp. 180–82.

⁵⁴ On the following, see Medley, "Chinese Ceramics and Islamic Design," pp. 3–5; "The Yüan-Ming Transformations in Blue and Red Decorated Porcelains of China," *Ars Orientalis* 9 (1973): 97; Basil Gray, "The Influence of Near Eastern Metalwork on Chinese Ceramics," *TOCS* 18 (1940–41): 47–60; Yolanda Crowe, "The Islamic Potter and China," *Apollo* 103 (1976): 298–301. For comparison of the Chinese and Islamic calligraphic traditions, see Oleg Grabar, *The Mediation of Ornament* (Princeton: Princeton University Press, 1992), pp. 55–58, 116.

⁵⁵ On Persian blue-and-white earthenware produced at the court of the Timurid dynasty (1378–1506), see Thomas W. Lentz and Glenn D. Lowry, *Timur and the Princely Vision: Persian Art and Culture in the Fifteenth Century* (Los Angeles: Los Angeles County Museum of Art, 1989), pp. 108, 228–29; Ernest J. Grube, "Timurid Ceramics: Filling a Gap in the Ceramic History of the Islamic World," *TOCS* 58 (1993–94): 77–86. On Middle Eastern adaptation of Chinese design, see Marina D. Whitman, "The Scholar, the Drinker, and the Ceramic Pot-Painter," in *Content and Context of Visual Arts in the Islamic World*, ed. Priscilla P. Soucek (University Park, Pa.: Pennsylvania State University Press, 1988), pp. 255–61.

the course of time, Chinese craftsmen—partly because they were decorating much larger objects than before—embraced elements of Islamic composition, such as banded ornamentation and stricter regulation of space.

Although Chinese ceramics had influenced the development of pottery elsewhere from at least the time of the Tang dynasty, that impact greatly intensified and expanded after the fourteenth century. Above all, it was blue-and-white porcelain, with a color scheme and design principles adopted from the Middle East, that most powerfully shaped ceramic traditions throughout the ecumene.

PORCELAIN AND CERAMIC TRADITIONS IN THE ECUMENE

Wherever Chinese porcelain was traded and used, it greatly influenced local ceramic traditions. India is the only exception to this generalization, for it never fell under the spell of porcelain, even though immense amounts of porcelain passed through the subcontinent to the Middle East. Except for a minority of Muslims, Indians did not use porcelain, and their ceramic traditions remained isolated from it. Ancient Hindu notions of religious pollution dictated that utensils made from earthenware, which are porous and thus cannot be thoroughly cleaned, must be discarded after use. This injunction was naturally extended to porcelain vessels when they became available in the ninth century, even though their surface is impermeable. Of course, porcelain was always too expensive for such casual employment. Many scrupulous Hindus eschewed all ceramic utensils and instead used plates made of leaves or metal. Small-scale craftsmen made crockery in every Indian village, coarse red wares that reflected local social norms; they were neither traded widely nor influenced by foreign commodities.⁵⁶ Porcelain was esteemed only among Muslim merchants in the port cities and Muslim aristocrats at the courts of the Delhi sultanate (1206–1526) and Mughal empire (1526–1707).

In general, the most creative responses to Chinese porcelain by other ceramic traditions arose in regions with a sophisticated culture (as characterized by density of urban life, organized religion, and some measure of literacy), while peoples in relatively less developed areas sometimes abandoned their native pottery styles altogether. Naturally,

⁵⁶ K. N. Chaudhuri, *Asia before Europe: Economy and Civilisation of the Indian Ocean from the Rise of Islam to 1750* (Cambridge: Cambridge University Press, 1990), pp. 332–33; S. P. Gupta, “Pottery of the Indo-Pakistani Subcontinent,” *Orientations* 8 (1977): 46–48.

the countries closest to China felt its effects the most. Early in the Koryo dynasty (918–1392) Korean potters encountered Chinese ceramic styles and technology, and by the eleventh century they were producing wares that even the Chinese admired for their excellence.⁵⁷ Japan purchased Chinese porcelain from early in the Heian period (645–1185). During the Kamakura period (1185–1333), substantial imports of Chinese pottery influenced Japanese earthenwares in style and decoration.⁵⁸ Japanese and Chinese ceramic traditions came much closer later in the Ashikaga period (1336–1600) when Toyotomi Hideyoshi, the ruler of Japan, attacked Korea. The invasions of 1592 and 1598 are sometimes called “the Potters’ Wars” because the Japanese captured hundreds of Korean ceramic craftsmen and brought them to Kyushu in southern Japan, where they introduced Chinese kiln technology and craftsmanship, as well as the use of kaolin.⁵⁹ Japanese pottery even competed successfully with Chinese wares in Japan and Europe in the seventeenth century, in part by its inventive and colorful variations on Chinese styles.⁶⁰

Vietnam also developed a sophisticated pottery tradition that represented a distinctive style within the context of Chinese influence. In the first century of the Common Era, armies of the Han dynasty conquered the area that is today northern Vietnam. From that time, even when Vietnam threw off Chinese control, the development of Vietnamese ceramics paralleled that of Chinese wares.⁶¹ In the early Ming

⁵⁷ Yutaka Minio, “Koryo and Choson Dynasty Ceramics,” in *The Radiance of Jade and the Clarity of Water: Korean Ceramics from the Ataka Collection* (exh. cat.) (New York: Hudson Hills Press, 1991), pp. 27–34; G. St. G. M. Gompertz, *Korean Celadons and Other Wares of the Koryo Period* (London: Faber and Faber, 1962), pp. 19–20.

⁵⁸ Soame Jenyns, *Japanese Pottery* (London: Faber and Faber, 1971), pp. 164–96; George Kuwayama, “The Significance of Chinese Ceramics in the East and West,” in *Imperial Taste: Chinese Ceramics from the Percival David Foundation* (exh. cat.) (Los Angeles: Los Angeles County Museum of Art, 1989), pp. 93–102.

⁵⁹ Oliver Impey, *The Early Porcelain Kilns of Japan: Arita in the First Half of the Seventeenth Century* (Oxford: Clarendon Press, 1996), pp. 26–27, 57; Tsugio Mikami, *The Art of Japanese Ceramics* (New York: Weatherhill, 1972), p. 160; Judith H. Day, “Influence and Innovation: Transplanted Korean Potters and Japanese Ceramics,” *Bulletin of the Oriental Ceramic Society of Hong Kong* 10 (1992–94): 54–58.

⁶⁰ Oliver Impey, “Shoki-Imari and Tianqi: Arita and Jingdezhen in Competition for the Japanese Market in Porcelain in the Second Quarter of the Seventeenth Century,” *Medenedelingenblad nederlandse vereniging van vrienden van de ceramiek* 116 (1984): 15–29; “The Trade in Japanese Porcelain,” in *Porcelain for Palaces: The Fashion for Japan in Europe, 1650–1750* (exh. cat.) (London: Oriental Ceramic Society, 1990), pp. 18–21; T. Volker, *The Japanese Porcelain Trade of the Dutch East India Company after 1683* (Leiden: E. J. Brill, 1959).

⁶¹ Roxanna M. Brown, *The Ceramics of South-East Asia* (Kuala Lumpur: Oxford University Press, 1977), pp. 16–17; Robert P. Griffing, Jr., “Dating Annanese Blue and White,” *Orientations* 7 (1976): 32–48.

period the Yongle emperor (r. 1403–24) launched an invasion of Vietnam, an ultimately unsuccessful venture, but as a result of the conflict Vietnamese potters shifted entirely to production of blue-and-white earthenware. Merchants in Tonkin exported Vietnamese pottery in Chinese styles to Japan and Southeast Asia, while craftsmen made tiles in blue and white for the Hindu-Javanese court of Majapahit.⁶² In the late sixteenth century entrepreneurs shipped some Vietnamese ceramics to Persia, where potters copied their designs—in fact, mainly variations on themes taken from fifteenth-century Ming pieces—onto Persian earthenware whose decorative patterns also came in part from Chinese porcelain. In turn, Chinese potters sometimes copied Vietnamese styles onto their own exports to Southeast Asia.⁶³

The Thai people of the lower Mekong basin lived far enough from China to escape invasion yet close enough to benefit from the impact of Chinese culture and technology. Chinese merchants exported porcelain to Angkor soon after a polity emerged there in the ninth century, and kilns at Sukhothai and Sisatchanalai produced vessels that owed much to China, along with glazed tiles for the temple complexes of the Thai kingdom. During the Yuan period Chinese potters even migrated to Thailand, where they set up kilns at Sukhothai and then at Sawankhalok. Thai wares sold well in maritime Southeast Asia for a time, but by the sixteenth century political disruption in Thailand and an increase in Chinese trade ceramics brought the exports to an end.⁶⁴

Maritime Southeast Asia responded in a dramatically different way to porcelain than did Korea, Japan, and Vietnam. The peoples of the archipelago first came into contact with Chinese pottery during the Tang dynasty. Since their own crude kilns produced only unglazed earthenware (or terra-cotta), they enormously admired the high-quality

⁶² John Guy, *Ceramic Traditions of South-East Asia* (Oxford: Oxford University Press, 1989), pp. 42, 51–54; and Guy, “Cultural Relations and Asian Trade: The Vietnamese Wall Tiles of Majapahit,” in *Southeast Asian Archaeology 1986*, ed. Ian and Emily Glover (Oxford: BAR International Series, 1990), pp. 275–85; Hiromu Honda and Noriki Shimazu, *Vietnamese and Chinese Ceramics Used in the Japanese Tea Ceremony* (Singapore: Oxford University Press, 1993).

⁶³ Whitman, “Persian Blue-and-White Ceramics,” 1:141–42; Eng-Lee Seok Chee, “Adaptations and Mimicry in Trade Ceramics,” *Arts of Asia* 17 (1987): 88.

⁶⁴ Hiroshi Fujiwara, *Khmer Ceramics from the Kanratan Collection in the Southeast Asian Ceramics Museum, Kyoto* (Singapore: Oxford University Press, 1990), pp. 6–7; Guy, *Ceramic Traditions of South-East Asia*, pp. 16–17, 28–36; Hiram Woodward, “The Dating of Sukhothai and Sawankhalok Ceramics: Some Considerations,” *Journal of the Siam Society* 66 (1978): 1–7.

Chinese imports and came to scorn their own crockery.⁶⁵ The substantial nature of the trade is revealed by the shards of porcelain that litter the beaches of Southeast Asia and lie buried in middens in the highlands of Sumatra, Borneo, and the Philippines.⁶⁶ An English traveler in the isolated Andaman Islands (in the Bay of Bengal) in 1613 reported, "Heere uppon a little ile wee founde a greate percell of broken porseleyne of all manner of sortes. . . . From whence it was come wee coulde not knowe, for wee sawe no signe att all of any junckes or shippes which might there have bene caste awaye."⁶⁷ Chinese imports devastated native ceramic traditions, for porcelain, along with Chinese-style earthenwares from Vietnam and Thailand, replaced locally made crockery for all important cultural functions, such as marriage and burial ceremonies. The Philippines were typical: beginning in the Song period, a flood of Chinese porcelain dealt a deathblow to traditional pottery styles. Given the thousands of tons of porcelain shards excavated in the islands, the period of Filipino history from the Tang to the arrival of the Spanish at Cebu in 1565 has been termed "the Porcelain Age."⁶⁸

The advent of porcelain destroyed rather than invigorated the ceramic traditions of the archipelago because there was an enormous cultural and technological gap between China and maritime Southeast Asia. It is clear that many tribes there regarded pottery in the context of the supernatural world. Like peoples in early Mesopotamian and Chinese civilization, they looked upon the seemingly magical

⁶⁵ Anthony Reid, *Southeast Asia in the Age of Commerce, 1450–1680*, vol. 1, *The Lands below the Winds* (New Haven: Yale University Press, 1988), p. 104; John S. Guy, *Oriental Trade Ceramics in South-East Asia, Ninth to Sixteenth Centuries, with a Catalogue of Chinese, Vietnamese, and Thai Wares in Australian Collections* (Singapore: Oxford University Press, 1986), pp. 4–22; Barbara Harrisson and P. M. Shariffuddin, "Sungai Lumut: A 15th Century Burial Ground," *Brunei Museum Journal* 1 (1969): 47–48.

⁶⁶ Abu Ridho, "The Chinese Ceramics Found in Muara Jambi, Sumatra," in *Proceedings of the 31st International Congress of Human Sciences in Asia and North Africa*, ed. Yamamoto Tatsuro (Tokyo: Toho Bakkai, 1984), pp. 420–21; C. Zainie and Tom Harrisson, "Early Chinese Stonewares Excavated in Sarawak, 1947–67," *Sarawak Museum Journal* 30 (1967): 30–99; Rita C. Tan, "Vestiges of the Nanhai Trade," in *Guangdong Ceramics from Butuan and Other Philippine Sites* (exh. cat.), ed. Roxanna M. Brown (Manila: Oriental Ceramic Society of the Philippines, 1989), pp. 29–33.

⁶⁷ Peter Floris: *His Voyage to the East Indies in the Globe, 1611–1615*, ed. W. H. Moreland (London: Hakluyt Society, 1934), p. 108.

⁶⁸ Michael Sullivan, "Notes on Chinese Export Wares in Southeast Asia," TOCS 33 (1960–62): 71–74; Jesus T. Peralta, *Kayamanan: Pottery and Ceramics from the Arturo de Santos Collection* (Manila: Central Bank of the Philippines, 1982), pp. 6–10; *Chinese and Southeast Asian Greenware Found in the Philippines* (exh. cat.) (Manila: Oriental Ceramic Society of the Philippines, 1991).

transformation of clay in fire as a metaphor for divine creation and for human contact with occult forces.⁶⁹ To societies that made only terracotta, porcelain, with its ethereal qualities and enigmatic designs, was not merely a functional commodity but a talismanic substance to be comprehended in exalted terms. The peoples of the archipelago viewed porcelain vessels as communal entities imbued with cosmological power, not as utilitarian articles for the domestic economy. Furthermore, since the vessels came to the islands as precious foreign commodities, they took on great political and symbolic significance. Porcelain utensils (and other prestige trade goods) conferred wealth and power on those who controlled their distribution, while their mysterious origin in distant, potent realms enhanced their value.⁷⁰ As a consequence of their assumptions about ceramics, and precisely because Chinese imports so thoroughly displaced local pottery traditions, the inhabitants of maritime Southeast Asia integrated porcelain more thoroughly into their culture than did any other people.

This is suggested by the scene that greeted Ferdinand Magellan's survivors in the *Victoria* when they reached northwestern Borneo in 1521, just after the commander and forty other men had been killed at Cebu. Ranks of warriors carrying porcelain jars draped in silk welcomed the Spaniards, and women later served the mariners a feast on "china dishes."⁷¹ Those ceremonial displays involved more than just bringing out the best tableware for guests: the natives apparently employed the apotropaic force of their porcelain to establish a harmonious footing with unsettling strangers. Chinese "dragon jars" (*martialban*) radiated power; the peoples of Borneo and the Philippines saw them in magical terms. The jars were given names, inducted into clans, married to each

⁶⁹ See P. R. S. Moorey, *Ancient Mesopotamian Materials and Industries* (Oxford: Clarendon Press, 1994), pp. 147, 162–63; Karen D. Vitelli, "Pots, Potters, and the Shaping of Greek Neolithic Society," in *The Emergence of Pottery: Technology and Innovation in Ancient Societies*, ed. William K. Barnett and John W. Hoopes (Washington, D.C.: Smithsonian Institution Press, 1995), pp. 61–62; John Hay, *Kernels of Energy, Bones of Earth: The Rock in Chinese Art* (exh. cat.) (New York: China Institute in America, 1986), pp. 44, 54, 56. For similar notions in contemporary West Africa, see Nicholas David, Judy Sternier, and Kodzo Gavua, "Why Pots Are Decorated," *Current Anthropology* 29 (1988): 365–89.

⁷⁰ On political power and trade goods, see Leonard Y. Andaya, *The World of Maluku: Eastern Indonesia in the Early Modern Period* (Honolulu: University of Hawai'i Press, 1993), pp. 177–78. On symbolic significance and trade goods, see Mary W. Helms, "Essay on Objects: Interpretations of Distance Made Tangible," in *Implicit Understandings: Observing, Reporting, and Reflecting on the Encounters between Europeans and Other Peoples in the Early Modern Era*, ed. Stuart B. Schwartz (Cambridge: Cambridge University Press, 1994), pp. 355–77.

⁷¹ Antonio Pigafetta, *The First Voyage Round the World by Magellan*, ed. and trans. Henry Stanley (London: Hakluyt Society, 1874), p. 115.

other, buried with ceremony, and passed down through generations; they were seen to converse, chase one another, turn into animals and forest spirits, take human form, heal the sick, tell fortunes, and issue prophecies.⁷²

The Pala'wan people of Palawan Island, between Borneo and the Philippines, believed that shooting stars striking the earth gave birth to porcelain jars. The Tinguian from the region of Abra in the Philippines and the Ifugao from the province of that name regarded the jars as gifts from gods who lived in the sky and in local caves. The Tagbanua on Palawan Island summoned deities and spirits to tribal feasts by tapping their porcelain jars to give a musical ring. Blowing across the tops of the vessels produced vibrating moans, which were read as divine warnings against calamity.⁷³ The Melanau of Borneo rubbed coconut oil from small porcelain jars on the bodies of married couples to ensure fertility. The nearby Kelabit hung Chinese pots from the rafters of their homes along with the heads of their enemies so that the spiritual energy of the latter would be drained into the containers. Warriors used seventeenth-century Chinese flasks to offer libations to enemy heads. The Iban of Sarawak in Borneo placed Chinese ceramics at the base of carved poles from which the heads of enemies were suspended, and the Punan Ba adorned their carved funeral columns with porcelain to celebrate the heroic loss of fellow warriors.⁷⁴ In short, porcelain played a central role in the whole cycle of existence in maritime Southeast Asia—birth, marriage, feasting, combat, and death.

The Chinese ships that brought porcelain and other commodities to the archipelago sometimes continued to the littoral of East Africa, the western edge of the great maritime realm that stretched from the

⁷² Atremio C. Barbosa, "Heirloom Jars in Philippine Rituals," in *A Thousand Years of Stoneware Jars in the Philippines* (Manila: Jars Collectors, 1992), pp. 70–94; Barbara Harrisson, *Pusaka: Heirloom Jars of Borneo* (Singapore: Oxford University Press, 1986). Jars with dragon and phoenix designs were especially popular in maritime Southeast Asia. See Barbara Harrisson, *Later Ceramics in South-East Asia: Sixteenth to Twentieth Centuries* (Kuala Lumpur: Oxford University Press, 1995), p. 35. On dragon jars see Eine Moore, "A Suggested Classification of Stonewares of Martabani Type," *Sarawak Museum Journal* 36–37 (1970): 1–78.

⁷³ Barbosa, "Heirloom Jars in Philippine Rituals," pp. 76–77, 80; Michael Sullivan, "Notes on Chinese Export Wares in Southeast Asia," *TOCS* 33 (1960–62): 63; Fay-Cooper Cole, *Chinese Pottery in the Philippines* (Chicago: Field Museum of Natural History, 1912), pp. 11–12.

⁷⁴ Tutong Kaboy and Eine Moore, "Ceramics and Their Uses among the Coastal Melanaus," *Sarawak Museum Journal* 30–31 (1967): 10–29; Lucas China, "Chinese Ceramics in Sarawak," *Orientations* 11 (1980): 34–36; Harrisson, *Pusaka: Heirloom Jars of Borneo*, pp. 25–28.

Philippines and the Spice Islands.⁷⁵ Substantial amounts of porcelain began arriving on the Swahili coast in the fourteenth century. Peddlers traded some of it inland, perhaps as far as the Upper Niger region of West Africa. Here, as in the Philippines and Borneo, foreign wares displaced locally made crockery. From the Horn of Africa to the Zambezi, some forty ports measured good fortune by their access to Chinese pottery. A Swahili poet thus lamented the ruin of a town north of Mombasa: "Where once the porcelain stood in the wall niches, now wild birds nestle their fledglings."⁷⁶

Shards of porcelain, along with pieces of Chinese-influenced earth-ware from the Middle East, replaced elaborately carved coral decoration on Muslim tombs and holy places.⁷⁷ At many sacred sites associated with ancestors and honored dead, such as caves and rock shelters, Muslims and members of other faiths left porcelain vessels as offerings to propitiate spirits and to serve as recompense for answered prayers. The arrival of blue-and-white porcelain in the mid-fifteenth century impelled worshipers to employ it as decoration in the vaults of mosques, as well as in spandrels and architraves of *mihrabs*.⁷⁸ Muslims decorated the façade of a large domed tomb on Pate Island (now in northern Kenya) with pieces of blue-and-white Chinese and Middle Eastern wares, and they set blue-and-white pottery in the roof of a fifteenth-century building in Kilwa, south of Dar es Salaam.⁷⁹ Porcelain pieces encircled the base of the Great Pillar of Malindi, and a frieze of Ming bowls topped the Great Pillar of Mambrui, north of Malindi.

⁷⁵ See Neville Chittick, "East Africa and the Orient: Ports and Trade before the Arrival of the Portuguese," in *Historical Relations across the Indian Ocean* (Ghent: UNESCO, 1980), p. 13.

⁷⁶ Peter S. Garlake, "The Value of Imported Ceramics in the Dating and Interpretation of the Rhodesian Iron Age," *Journal of African History* 9 (1968): 13–33; J. J. L. Duyvendak, *China's Discovery of Africa* (London: Arthur Probsthain, 1949), pp. 5–26; Caroline Sassoon, *Chinese Porcelain Marks from Coastal Sites in Kenya: Aspects of Trade in the Indian Ocean, XIV–XIX Centuries* (Oxford: BAR International Series, 1978), pp. 1–7. The poem is quoted in Gervase Mathew, "Chinese Porcelain in East Africa and on the Coast of South Arabia," *Oriental Art* 2 (1956): 54.

⁷⁷ Abdul Sheriff, *Slaves, Spices, and Ivory in Zanzibar: Integration of an East African Commercial Empire into the World Economy, 1770–1873* (London: James Currey, 1987), p. 15. On East African connections with the Middle East, see André Wink, *Al-Hind: The Making of the Indo-Islamic World*, vol. 1, *Early Medieval India and the Expansion of Islam, 7th–11th Centuries* (Leiden: E. J. Brill, 1990), pp. 25–33.

⁷⁸ Peter S. Garlake, *The Early Islamic Architecture of the East African Coast* (Nairobi: Oxford University Press, 1966), pp. 36, 47, 62–63.

⁷⁹ George H. Okello Abungu, "Islam on the Kenyan Coast: An Overview of the Kenyan Coastal Sacred Sites," in *Sacred Sites, Sacred Places*, ed. David L. Carmichael, Jane Hubert, Brian Reeves, and Audhild Schanche (London: Routledge, 1994), pp. 159–60; Neville Chittick, *Kilwa: An Islamic Trading City on the East African Coast*, 2 vols. (Nairobi: British Institute in Eastern Africa, 1974), 1:306–309.

Broken Chinese pots of the seventeenth century adorned the bases of the Mbaraki Pillar and a nearby mosque in Mombasa. In the sixteenth century, Portuguese imitations of Chinese porcelain were set into the walls of the Small Mosque at Mnarani, a town between Malindi and Mombasa.⁸⁰ This use of ceramics as ornamentation on Muslim holy places may have come to East Africa with pilgrims from India, after which it became imbued with local occult notions.⁸¹

Clearly, in both East Africa and the archipelago, porcelain and its imitations permeated spiritual life. In contrast, porcelain in the Middle East and Europe remained marginal to religion, employed only as an occasional decorative material on mosques and churches, apparently unaccompanied by connotations of supernatural power. Chinese porcelain in the West after 1500 had an impact similar to what it had had centuries earlier in Korea, Japan, and Vietnam. It profoundly reshaped ceramic traditions and entered cultural life as an exotic manifestation of high civilization.

THE RISE OF CHINESE PORCELAIN IN THE WEST

The Middle Eastern innovation of painted decoration on tin-glazed earthenware revolutionized ceramic traditions at both poles of the ecumene. In China, it led to the creation of blue-and-white porcelain, while in the West, it transformed the coarse brown earthenware that had been virtually the only pottery made there since the fall of the Roman empire.⁸² From the thirteenth century Middle Eastern tin-glazing and painted decoration inspired potters in Europe to reconceptualize their craft, to turn from producing mundane, utilitarian crockery to making vessels with vivid colors and imaginative decoration. Western potters thereby achieved a level of mastery that made it possible for them to take on the challenge of copying Chinese porcelain after 1500.

The Middle Eastern techniques reached Málaga in Andalucía in

⁸⁰ James Kirkman, "The Great Pillars of Malindi and Mambrui," *Oriental Art* 4 (1958): 55–67; Abungu, "Islam on the Kenyan Coast," p. 155; Garlake, *Early Islamic Architecture*, p. 56.

⁸¹ See Klaus Fischer, "Citations and Copies of Islamic and Buddhist Columns," in *Indian Art and Connoisseurship: Essays in Honour of Douglas Barrett*, ed. John Guy (New Delhi: Indira Gandhi National Centre for the Arts, 1995), pp. 263–75.

⁸² On the Greco-Roman preference for glass over pottery for high-grade tableware, see S. A. M. Adshead, *Material Culture in Europe and China, 1400–1800: The Rise of Consumerism* (New York: St. Martin's Press, 1997), pp. 163–64.

the thirteenth century, probably carried there by potters from Fatimid Egypt. Knowledge of the methods spread north to Manises in Valencia during the next century, and by the early fifteenth century merchants there exported to Italy large quantities of earthenware vessels in "Hispano-Moresque" style.⁸³ In fact, parts of Italy already were acquainted with tin-glazed earthenware because of imports from Egypt, North Africa, and Andalucian Spain. In a custom reminiscent of the warrior columns of Borneo and the Islamic pillars of the Swahili coast, Italians decorated the walls of churches and civic monuments with lustrous ceramics (called *bacini*) from foreign realms.⁸⁴

Hispano-Moresque imports stimulated widespread adoption of tin-glazing in Italy. In Tuscany and Umbria, however, Italian potters added vivid colors—rich greens, yellows, and oranges—when they copied the floral patterns and arabesques of the Spanish vessels. From the early sixteenth century they also used Renaissance pictorial conventions drawn from paintings and engravings for decorative scenes on ceramics.⁸⁵ The new *istoriato* (story-painted) pottery elevated the respectability of earthenware in the eyes of sophisticated patrons, who came to regard clay as a noble substance, worthy of admittance to the realm of art. In *I tre libri dell'arte del vasaio* (1557), the first major European treatise on the art of pottery, Cipriano Piccolpasso assures his readers that "the making of earthen pots . . . will not diminish the greatness and worth" of princes.⁸⁶

The Italian tradition of tin-glazed earthenware reached Antwerp in the early sixteenth century, carried there by Guido di Savino (known

⁸³ Caiger-Smith, *Tin-Glaze Pottery*, pp. 53–72, 82; Guillermo Rosselló Bordoy, "The Ceramics of al-Andalus," in *Al-Andalus: The Art of Islamic Spain* (exh. cat.), ed. Jerrilynn D. Dodds (New York: Metropolitan Museum of Art, 1992), pp. 191–205. Tin-glazed earthenware is known as maiolica in Spain and Italy, faience in France, and delftware in Holland and England. There are only relatively minor differences among these types.

⁸⁴ H. Blake, "The 'Bacini' of North Italy," *La céramique médiévale en Méditerranée occidentale: Xe–XVe siècle* (Paris: Centre National de la Recherche Scientifique, 1980), pp. 93–111; Graziella Berti and Liana Tongiorgi, *Ceramiche importate dalla Spagna nell'area pisana dal XII al XV secolo* (Florence: All'insegna del Giglio, 1985); David Abulafia, "The Pisan Bacini and the Medieval Mediterranean Economy: A Historian's Viewpoint," in *Papers in Italian Archaeology IV*, ed. Caroline Malone and Simon Stoddart (Oxford: BAR International Series, 1985), pp. 287–302.

⁸⁵ See Timothy Wilson, *Ceramic Art of the Renaissance* (exh. cat.) (Austin: University of Texas Press, 1987); Jeane Giacomotti, *La majolique de la Renaissance* (Paris: Presses Universitaires de France, 1961).

⁸⁶ Cipriano Piccolpasso, *The Three Books of the Potter's Art*, ed. and trans. Ronald Lightfoot and A. Caiger-Smith, 2 vols. (London: Scolar Press, 1980), 2:105. On increased use of earthenware by the Italian elite, see J. V. G. Mallet, "Mantua and Urbino: Gonzaga Patronage of Maiolica," *Apollo* 113 (1981): 162–69; Peter Thornton, *The Italian Renaissance Interior* (New York: Abrams, 1991), pp. 105–107.

also as Andries), identified in Flanders as a “Venetian potter” (*veneetsienpotbacker*).⁸⁷ Northern Europeans had previously known only drab earthenware, so they quickly embraced the vibrant colors made possible by the technique of tin-glazing. French potters came to Flanders and carried the skill back home. When troops sacked Antwerp in the infamous Spanish Fury of 1576, three of Guido’s sons fled to England, where they introduced tin-glazing to potteries in London and Norwich; another son brought the craft, enriched with Italian and Flemish variations in design and color, to the Iberian peninsula.⁸⁸

After roughly 150 years, then, the Hispano-Moresque legacy had come full circle. Things had changed in the meantime, however. The coming of porcelain to Europe since the voyage of Vasco da Gama meant that the new art of tin-glazed earthenware, for all its vitality and originality, was destined for obliteration. The potters of Lisbon who greeted Philip III with their imitations of porcelain were on the verge of having their craft displaced by the real thing.

Despite the market for porcelain in Europe, however, massive quantities did not begin arriving until a century after the voyage of Vasco da Gama, and when they did, they came in Dutch rather than Portuguese ships. Neither the Portuguese crown nor its merchants obtained very large amounts of porcelain or spread it far beyond the Iberian peninsula.⁸⁹ The failure of the Portuguese was mainly a consequence of their bad luck in reaching China at a time when that country’s government looked upon foreign merchants and maritime trade with exceptional hostility. That policy originated with the Hongwu emperor (r. 1368–98), the founder of the Ming dynasty, who overthrew the Mongols and reversed the commitment to seaborne commerce upon which China had thrived during the Song and Yuan dynasties.⁹⁰ Although their ships reached the Chinese coast in 1517, it

⁸⁷ Marcel Laurent, “Guido di Savino and the Earthenware of Antwerp,” *Burlington Magazine* 41 (1922): 288–97; Angelica Alverà Bortolotto and Claire Dumortier, “Les majoliques anversoises ‘à la façon de venise’ de la première moitié du XVI^e siècle,” *Revue belge d’archéologie et d’histoire de l’art* 59 (1990): 55–74.

⁸⁸ Caiger-Smith, *Tin-Glaze Pottery*, p. 103; Frank Britton, *London Delftware* (London: Jonathan Horne, 1987), pp. 18–21; H. P. Fourest, *Delftware: Faience Production at Delft*, trans. Katherine Watson (New York: Rizzoli, 1980), pp. 182–83.

⁸⁹ On the small quantities of porcelain shipped by the Portuguese, see James C. Boyajian, *Portuguese Trade in Asia under the Habsburgs, 1580–1640* (Baltimore: Johns Hopkins University Press, 1993), pp. 48–49, 324.

⁹⁰ On the emperor’s policy of commercial isolation, see Edward Dreyer, *Early Ming China: A Political History, 1355–1435* (Stanford: Stanford University Press, 1982), pp. 102, 115, 121–22. On consequences of the emperor’s policy, see Robert Finlay, “The Maritime Expeditions of Zheng He: Ideology, State Power, and Overseas Trade in Ming China,” *Studies in Medieval and Renaissance History* (forthcoming).

was only in 1557 that the Portuguese received permission from the imperial government to occupy a permanent settlement, the port that became Macao. The golden age of Portuguese trade in Asia followed, for Macao became the commercial linchpin between China, Japan, and the West.⁹¹ Within a generation, however, ships of the Dutch East India Company (Vereenigde Oost-Indische Compagnie, or VOC) wrested leadership in Asian trade from the Portuguese. In 1602 and 1603, Dutch admirals captured Portuguese carracks sailing from Macao with cargoes of lacquer, silk, and porcelain. The auction of the porcelain in Holland caused an international sensation and convinced the VOC to begin purchasing it in China.⁹² With a bow to Portuguese precedence in the trade, the Dutch coined the term *kraakporselein* (carrack-china) for the imports.⁹³ The Western mania for porcelain had begun.

From the beginning of the seventeenth century to the end of the eighteenth, the VOC imported about 43 million pieces of porcelain, while the English, French, Swedish, and Danish East Indies Companies shipped at least 30 million. There certainly were additional millions not recorded in official ledgers.⁹⁴ Individual cargos were sizable: the *Goteborg*, sailing for the Swedish East India Company, sank in 1745 near its home port with about 700 thousand pieces of porcelain.⁹⁵ In addition, European potteries turned out hundreds of millions of pieces of tin-glazed earthenware, almost all now in imitation of blue-and-white porcelain rather than in the tradition of Italian polychrome

⁹¹ Sanjay Subrahmanyam, *The Portuguese Empire in Asia, 1500–1700: A Political and Economic History* (London: Longman, 1993), pp. 101–105; Charles R. Boxer, *The Great Ship from Amacon: Annals of Macau and the Old Japan Trade, 1555–1640* (Lisbon: CEHU, 1963). On early contacts and conflict between the Chinese and Portuguese, see T'ien-tse Chang, *Sino-Portuguese Trade from 1514 to 1644* (Leiden: E. J. Brill, 1969), pp. 47–53, 71, 83.

⁹² T. Volker, *Porcelain and the Dutch East India Company as Recorded in the Dagh-Registers of Batavia Castle, Those of Hirado and Deshima and Other Contemporary Powers* (Leiden: E. J. Brill, 1954), p. 22; Chang, *Sino-Portuguese Trade*, p. 112. On creation of the VOC, see Jonathan I. Israel, *Dutch Primacy in World Trade, 1585–1740* (Oxford: Clarendon Press, 1986), pp. 67–73.

⁹³ See Maura Rinaldi, *Kraak Porcelain: A Moment in the History of Trade* (London: Bamboo Publications, 1989), pp. 60–61.

⁹⁴ Porcelain, which yielded annual profits of 80%–100%, represented about 5% of all VOC shipments from Asia during the period. In terms of care, concern, and steady profit, however, that does not reflect the importance of porcelain to the company. See C. J. A. Jörg, *Porcelain and the Dutch China Trade* (The Hague: M. Nijhoff, 1982), pp. 93, 149, 193. After 1717 porcelain represented about 2% of the value of the Asian imports of the English East India Company. See *Chinese Export Art and Design* (exh. cat.), ed. Craig Clunas (London: Victoria and Albert Museum, 1987), p. 16.

⁹⁵ Stig Roth, *Chinese Ceramics Imported by the Swedish East India Company* (Goteburg: Gothenburg Historical Museum, 1965), p. 12.

decoration.⁹⁶ In fact, European potters for several generations had been taking designs from Italian copybooks and engravings, thereby preparing themselves for the task of responding to the visual culture of the Chinese.⁹⁷

Judging by the enthusiasm for blue-and-white porcelain in places as different as Japan, Borneo, Mombasa, Istanbul, and Amsterdam, the ceramic had an intrinsic, virtually universal appeal.⁹⁸ Its enormous popularity in the West, however, also stemmed from changes in dining conventions and elite taste. With a population of some 100 million in 1700, Europe offered an exceptionally receptive market for high-quality pottery. In the sixteenth century most people still used trenchers of wood and bread, as well as drinking cups made from horn and ash-wood. In England, unglazed earthenware mugs replaced "black jacks," tankards made from leather coated with pitch, only in the late sixteenth century.⁹⁹ Paintings of the early seventeenth century, such as Spanish and Dutch tavern scenes, suggest the wretched quality of the crockery on most tables.¹⁰⁰

In fifteenth-century Italy, tin-glazed earthenware became fashionable among the increasingly prosperous middling rank of people who could not afford expensive pewter and silver plate but who desired something better than terra-cotta and wood.¹⁰¹ During the seventeenth century those social classes grew considerably in northern Europe, especially in the Dutch republic and England. In part because of that, food conventions and etiquette changed dramatically in ways that created novel demands for tableware and kitchen utensils. Recipe books included greater varieties of meats, vegetables, and fresh fruit; butter, rice, maize, shallots, mushrooms, and salads became part of the

⁹⁶ On the huge amounts produced at Delft, see Jan de Vries and Ad van der Woude, *The First Modern Economy: Success, Failure, and Perseverance of the Dutch Economy, 1500–1815* (Cambridge: Cambridge University Press, 1997), p. 309.

⁹⁷ Caiger-Smith, *Tin-Glaze Pottery*, p. 129; Frits T. Scholten, "The Variety of Decoration on Dutch Delft, 1625–1675," *Magazine Antiques* 147 (1995): 194–203.

⁹⁸ For speculation on the color blue as one source of that appeal, see Philip Rawson, *Ceramics* (Philadelphia: University of Pennsylvania Press, 1984), pp. 139–41.

⁹⁹ Sara Paston-Williams, *The Art of Dining: A History of Cooking and Eating* (London: National Trust, 1993), pp. 75–76. See also Lorna Weatherhill, *The Growth of the Pottery Industry in England, 1660–1815* (New York: Garland Publishing, 1986), pp. 90–91.

¹⁰⁰ See the illustrations in *Velázquez in Seville* (exh. cat.), ed. Michael Clarke (Edinburgh: Trustees of the National Gallery of Scotland, 1996), pp. 132–53; *Masterpieces of Seventeenth-Century Dutch Genre Painting*, ed. Jane Iandola Watkins (Philadelphia: Philadelphia Museum of Art, 1984), plates 22–25, 27–29.

¹⁰¹ Richard Goldthwaite, "The Economic and Social World of Renaissance Maiolica," *Renaissance Quarterly* 42 (1989): 17–18.

diet of the well-to-do.¹⁰² Spices poured in from Asia and sugar from the great plantations of the Caribbean and Brazil. Tea, coffee, and chocolate, hot beverages that were best prepared and served with porcelain utensils, became popular in homes and taverns, especially after the 1650s.¹⁰³

Before the seventeenth century eating in the West had a communal aspect, with spoons, platters, and mugs passed around the table. Traveling through southern Germany in 1580, the essayist Montaigne noted with disdain that when soup was served in taverns, "everyone fishes together, for there is no individual serving."¹⁰⁴ "Let the dishes be of pewter, wood, or earthenware . . . it is all the same to me," he declared, but "I no more like drinking out of a common cup than I would like eating out of common fingers."¹⁰⁵ A century later the elite no longer endured communal meals. That was partly the consequence of a consumer revolution that swept Europe, with ceramics leading the way in catering to the expanding domestic needs of the individual.¹⁰⁶ With the most ample diet, best appointed homes, and most highly developed market for the decorative and applied arts in Europe, the Dutch led the way in providing new tableware. Inventories of the Delft potteries increased enormously during the seventeenth century.¹⁰⁷ In 1729

¹⁰² Stephen Mennell, *All Manners of Food: Eating and Taste in England and France from the Middle Ages to the Present* (Oxford: Blackwell, 1985), pp. 62–101; T. Sarah Peterson, *Acquired Taste: The French Origins of Modern Cooking* (Ithaca, N.Y.: Cornell University Press, 1994), pp. 163–208. See also Carole Shammas, "The Eighteenth-Century English Diet and Economic Change," *Explorations in Economic History* 21 (1984): 254–69.

¹⁰³ Sidney W. Mintz, *Sweetness and Power: The Place of Sugar in Modern History* (New York: Viking Press, 1985), pp. 45, 113–14, 147–48; K. N. Chaudhuri, *The Trading World of Asia and the English East India Company, 1660–1760* (Cambridge: Cambridge University Press, 1978), p. 406; John E. Wills, Jr., "European Consumption and Asian Production in the Seventeenth and Eighteenth Centuries," in *Consumption and the World of Goods*, ed. John Brewer and Roy Porter (London: Routledge, 1993), pp. 140–46.

¹⁰⁴ Montaigne's *Travel Journal*, trans. Donald M. Frame (San Francisco: North Point Press, 1983), p. 27.

¹⁰⁵ Michel de Montaigne, *The Complete Essays*, ed. and trans. M. A. Screech (London: Penguin Books, 1993), pp. 1114, 1230–31.

¹⁰⁶ See Neil McKendrick, "Commercialization and the Economy," in *The Birth of a Consumer Society: The Commercialization of Eighteenth-Century England*, ed. Neil McKendrick, John Brewer, and J. H. Plumb (Bloomington: Indiana University Press, 1982), pp. 9–33; Carole Shammas, *The Pre-Industrial Consumer in England and America* (Oxford: Oxford University Press, 1990), pp. 181–93.

¹⁰⁷ Jan Daniel van Dam, "A Survey of Dutch Tiles," in *Dutch Tiles in the Philadelphia Museum of Art* (Philadelphia: University of Pennsylvania Press, 1984), p. 27; John Michael Montias, *Artists and Artisans in Delft: A Socio-economic Study of the Seventeenth Century* (Princeton: Princeton University Press, 1982), pp. 293–313. On the superiority of Dutch diet, homes, and arts, see Simon Schama, *The Embarrassment of Riches: An Interpretation of Dutch Culture in the Golden Age* (Berkeley: University of California Press, 1988), pp. 174–88, 304–19.

the VOC opened an office in Guangzhou and gave the Jingdezhen potters drawings and wooden models of earthenwares to copy into porcelain. These included a wide range of utensils that recently had crowded into Dutch cupboards, such as soup tureens, radish saucers, salt-cellars, sauceboats, butter coolers, juice pourers, and mustard pots.¹⁰⁸

The ultimate in individualized dining was the dinner service, with a complete setting for each person. The VOC and the English East India Company started importing porcelain dinner services in the early eighteenth century, while Meissen (in response) began manufacturing large quantities around the same time. In the course of the eighteenth century English families that could afford the extra expense—some ten times the price of ordinary settings—commissioned from China 4,000 services with their coats of arms.¹⁰⁹ In fact, Chinese dinner services had an impact that extends to the present day. The West was (so to speak) imprinted on blue-and-white pottery in the early modern period, shortly before the introduction of sets of tableware; thus, the configuration of the modern dinner plate—essentially a flat, white surface embellished with a border design and a central pictorial emblem—is a legacy of the porcelain of the Ming dynasty.¹¹⁰

Beyond a receptive market for high-quality pottery, however, princely and aristocratic enthusiasm for porcelain accounts for the enormous popularity of the product. Changes in the European dietary regime increased that fervor. During the Middle Ages the high cost of spices naturally restricted their use to the wealthy. Ginger, cinnamon, and nutmeg functioned primarily as markers of social discrimination, not as condiments to disguise tainted meat; they set off the aristocracy from lower social ranks as surely as Pantagruelian feasts of roast swan and stewed boar. When spices became abundant, from the sixteenth century, the elite gradually abandoned them and adopted new social signifiers.¹¹¹ The gastronomic culture of the rich and well born began emphasizing what were regarded as “natural” foods, such as soups and

¹⁰⁸ C. J. A. Jörg, “Porcelain for the Dutch in the Seventeenth Century,” in *The Porcelains of Jingdezhen*, p. 187.

¹⁰⁹ David Howard and John Ayers, *Masterpieces of Chinese Export Porcelain from the Motatahede Collection in the Virginia Museum* (London: Sotheby Parke Bernet, 1980), pp. 18–19; D. S. Howard, *Chinese Armorial Porcelain* (London: Faber and Faber, 1974), p. 68; Meister and Reber, *European Porcelain of the 18th Century*, pp. 101–102.

¹¹⁰ Jessica Rawson, *Chinese Ornament: The Lotus and the Dragon* (London: British Museum Publications, 1984), p. 11; see Marina D. Whitman, “Sixteenth-Century Persian Blue-and-White Dish,” *Orientations* 14 (1983): 27–28.

¹¹¹ Massimo Montanari, *The Culture of Food*, trans. Carl Ipsen (Oxford: Blackwell, 1994), pp. 59, 119; Bruno Laurioux, “Spices in the Medieval Diet: A New Approach,” *Food and Foodways* 1 (1985): 52–61.

meats seasoned with herbs. Modern dining protocols became fashionable, with the elite distinguished from their inferiors by the correct employment of *fourchettes* and *serviettes*.¹¹²

Displays of expensive tableware served the same social function, as well as being essential to the new alimentary sensibility and genteel conventions. Ceremonial feasting in the Middle Ages took the form of "potlatch"-style gatherings, with a lavishly dressed carcass on the table, tinted with cinnamon or spinach juice, exhibited with theatrical panache, and festively consumed before a crowd of spectators. By the mid-seventeenth century aristocratic fashion in dining shifted to the vessels that accompanied the relatively unadorned food, to table services whose magnificence and ostentation reflected the lofty status and sophisticated taste of the host. Pyramids of sweetmeats and songbirds were exiled from the center of the table, replaced with prancing porcelain figurines, Lilliputian models of splendor and privilege.¹¹³

From the kings of Portugal to the tsars of Russia, the princes of Europe collected porcelain. Like palaces and ermine robes, massed displays of the ceramic functioned as assertions of power and magnificence. Porcelain became the currency of social emulation among the aristocracy of every nation and spread down the social ladder to prosperous burghers and country gentry. Henry VIII of England (r. 1509–47) may have owned a porcelain vessel, while Elizabeth I (r. 1558–1603) possessed several. James I (r. 1603–25) may have received a gift of eight porcelain dishes from Sultan Iskandar Muda of Aceh in Sumatra. Charles II had a larger collection, especially after he married Catherine Braganza of Portugal in 1662, whose dowry included many Chinese wares.¹¹⁴ After the Glorious Revolution of 1688, William III and Mary II brought several hundred pieces of porcelain from the Dutch republic to England, along with a new continental fashion. The popularity of porcelain throughout Europe stemmed not only from its use in dining but also from its incorporation into the new consumer vogue for interior decoration, a trend that grew as the elite built increasingly spacious homes.¹¹⁵ According to Daniel Defoe (1660–

¹¹² Margaret Visser, *The Rituals of Dinner: The Origins, Evolution, Eccentricities, and Meaning of Table Manners* (New York: Grove Press, 1991), pp. 163–66, 189–90.

¹¹³ See Rawson, *Ceramics*, p. 200; Visser, *The Rituals of Dinner*, pp. 161–62. On feasts in the Middle Ages, see Mennell, *All Manners of Food*, pp. 40–61.

¹¹⁴ Jean Martin, "Identifying Chinese and Japanese Porcelain in Early European Collections," *Orientations* 23 (1992): 68; *The Voyage of Thomas Best to the East Indies, 1612–14*, ed. William Foster (London: Hakluyt Society, 1934), p. 213.

¹¹⁵ See Anne Somers Cocks, "The Nonfunctional Use of Ceramics in the English Country House during the Eighteenth Century," in *The Fashioning and Functioning of the*

1731), Queen Mary at Hampton Court introduced the English to the “fatal excess” of “piling their china upon the tops of cabinets, scrutores, and every chymney-piece, to the tops of the ceilings, and even setting up shelves for their china-ware, where they wanted such places, till it became a grievance in the expence of it, and even injurious to their families and estates.”¹¹⁶

As the great dynasty of the Dutch republic and an investor in the VOC, the house of Orange naturally did much to spread the fashion for porcelain around Europe. William III’s aunt, Louise Henriette, married Frederick of Prussia, who built the Oranienburg Palace around 1688 to house porcelain, while another aunt, Albertina Agnes, married William Frederick of Nassau-Dietz, who built the Oranienstein Palace in 1683 for the same purpose.¹¹⁷ Frederick William I of Prussia established a mirrored *Porzellankabinett* in 1702 in his palace at Charlottenburg near Berlin for his collection of 400 Chinese pieces. Influenced by his visit to Holland, Tsar Peter (the Great) of Russia (r. 1682–1725) set up a porcelain chamber in his palace of Monplaisir near Peterhof.¹¹⁸ William III’s great enemy, Louis XIV of France (r. 1643–1715), the arbiter of culture for European royalty, also promoted the fashion for porcelain. He inherited several hundred pieces from his grandmother Marie de’ Medici (1573–1642) and from Cardinal Mazarin (1602–61). In the 1680s he received a gift of over 1,000 porcelain vessels from Siamese embassies, after which the Sun King often dined *en porcelaine* at Versailles. In the next decade dozens of shops dealing in Chinese wares opened in Paris.¹¹⁹

European princes, however, aspired to manufacture their own porcelain rather than purchase it from China. A crucial stumbling block was to determine what sort of material to use. According to Marco

British Country House, ed. Gervase Jackson-Stops, Gordon J. Schochet, Lena Cowen Orlin, Elisabeth Blair MacDougall (Hanover, N.H.: University Press of New England, 1989), pp. 195–215.

¹¹⁶ Daniel Defoe, *A Tour through the Whole Island of Great Britain*, ed. P. N. Furbank and W. R. Owens (New Haven: Yale University Press, 1991), p. 65. On Hampton Court, see Joan Wilson, “A Phenomenon of Taste: The China Ware of Queen Mary II,” *Apollo* 96 (1972): 116–23.

¹¹⁷ Oliver Impey, “Porcelain for Palaces,” in *Porcelain for Palaces*, p. 59.

¹¹⁸ Meister and Reber, *European Porcelain of the 18th Century*, p. 18. See also Tatiana B. Arapova, “The Double-headed Eagle on Chinese Porcelain: Export Wares for Imperial Russia,” *Apollo* 135 (1992): 21–26.

¹¹⁹ D. F. Lunsingh Scheurleer, *Chinese Export Porcelain: Chine de Commande* (London: Faber and Faber, 1974), p. 113; F. J. B. Watson and Gillian Wilson, *Mounted Oriental Porcelain in the J. Paul Getty Museum* (Malibu, Calif.: J. Paul Getty Museum, 1982), pp. 6–8. On the Siamese gifts, see H. Belevitch-Stankevitch, *Le goût chinois en France au temps de Louis XIV* (Paris: Jouve, 1910), pp. 10–48, 256–62.

Polo, the Chinese mined a kind of earth or mud and left it to age in the open air for a generation before shaping it into shiny, beautiful bowls tinted the color of azure—surely a description of the *qingbai* of Jingdezhen.¹²⁰ Duarte Barbosa, a Portuguese writer, claimed in 1516 that porcelain was made from “fish ground fine, from eggshells and the white of eggs and other materials,” all of which was seasoned underground for up to a century.¹²¹ Although most early investigators sensibly concluded that porcelain was made from clay, they also agreed that it must be of a recondite sort, closer to precious stones, the chambered nautilus, rock crystal, and rhinoceros horn than to common earth. Fashionable cabinets of curiosities included porcelain vessels along with such treasures, for they seemed to focus and fuse the qualities of the exotic, the natural, and the artificial.¹²² The aristocracies of Europe and the headhunters of Borneo evidently shared some similar views about the marvelous nature of porcelain.

Alchemists took up the task of discovering the secret of porcelain, the new “white gold” (*weissener geld*).¹²³ Maestro Antonio, a Venetian alchemist, tried to create porcelain in the late fifteenth century, perhaps inspired by some vessels in the treasury of the Basilica of San Marco, but he produced only milky glass. Francesco I de’ Medici, the grand duke of Tuscany (r. 1574–87) and a fervent patron of alchemy, poured a fortune into trying to create porcelain by combining ground glass, powdered crystal, and Vicenza clay. Although his product was as white as porcelain, it proved virtually impossible to fire, carve, or mold. Researchers at Saint-Cloud near Paris in 1698 apparently produced something similar, but no vessels or documents survive from the experiments.¹²⁴ Merchants in China sent samples of kaolin to Europe to be analyzed, perhaps as early as the 1520s. In 1712 Père d’Entrecolles described the manufacturing process at Jingdezhen in a letter to France and dispatched a sample of porcelain paste to be examined by René A. F. de Réaumur, a well-known French chemist. Although de Réaumur correctly identified the essential constituents of the material,

¹²⁰ Carswell, “Blue-and-White Porcelain in China,” p. 16.

¹²¹ *The Book of Duarte Barbosa*, ed. Mansel Longworth Dames, 2 vols. (London: Hakluyt Society, 1921), 2:213–14.

¹²² See Martin Kemp, “‘Wrought by No Artist’s Hand’: The Natural, the Artificial, the Exotic, and the Scientific in Some Artefacts from the Renaissance,” in *Reframing the Renaissance: Visual Culture in Europe and Latin America, 1450–1650*, ed. Claire Farago (New Haven: Yale University Press, 1995), pp. 176–96.

¹²³ Claire Le Corbeiller, “German Porcelain of the Eighteenth Century,” *The Metropolitan Museum of Art Bulletin* 47 (1990): 6.

¹²⁴ Kingery and Vandiver, *Ceramic Masterpieces*, pp. 13–14, 135–47; Claire Le Corbeiller, “A Medici Porcelain Pilgrim Flask,” *J. Paul Getty Museum Journal* 16 (1988): 119–26.

the secret of porcelain manufacture actually had been discovered just a few years earlier by the alchemist Johann Friedrich Böttger.¹²⁵

In 1701 Böttger fled Prussia when he angered King Frederick I by failing to turn base metals into gold. Seized by Augustus of Saxony and forced to work on creating porcelain in the dungeons of the Jungfern-bastei in Dresden, Böttger bitterly wrote over the entrance to his laboratory that “God the Creator has made a potter out of an alchemist.”¹²⁶ Obsessed with porcelain, Augustus built a palace in Dresden to house his collection of some 10,000 pieces, and he even fantasized having tables and chairs made from the ceramic. In 1717 he traded 600 Saxon dragoons (later formed into the Porcelain Regiment) to King Frederick William I of Prussia in exchange for 151 large Ming vases.¹²⁷

Böttger and his associates arguably formed the first research and development enterprise in history, driven by visions of enormous profit and haunted by fears of industrial espionage. After considerable labor, Böttger produced his first piece of porcelain in January 1708, and a year later, Augustus opened the Royal Saxon Porcelain Manufactory at Meissen, northeast of Dresden.¹²⁸ But despite draconian methods of guarding against spies and betrayal, such as imprisoning his own craftsmen, Augustus failed to keep the secret of porcelain manufacture, known as the *arcانum*, for himself. Within a few years workers and “arcanists” escaped from Meissen and peddled the precious information to other European princes. Problems in constructing high-firing kilns and in locating sources of kaolin delayed Meissen’s rivals, but in a few decades porcelain manufactories dotted the map of Europe. In the mid-eighteenth century Duke Karl Eugen of Württemberg expressed a commonplace in declaring that a porcelain factory was “an indispensable accompaniment to splendor and magnificence.”¹²⁹

Of course, the Chinese eventually suffered a great deal more than Augustus the Strong from the spread of the secret. They lost their monopoly of porcelain, their longest and most dearly held treasure.

¹²⁵ “The Letters of Père d’Entrecolles,” p. 67; Kingery and Vandiver, *Ceramic Masterpieces*, p. 15.

¹²⁶ Quoted in S. Ducret, “German Hard-Paste Porcelain,” in *World Ceramics*, pp. 217–18.

¹²⁷ Walcha, *Meissen Porcelain*, pp. 128–29; Gerald Heres, *Dresdener Kunstsammlungen in 18. Jahrhunderts* (Leipzig: E. A. Seeman, 1991). On Augustus, see Herman Schreiber, *August der Starke, Kurfürst von Sachsen, König von Polen* (Munich: W. Heyne, 1986).

¹²⁸ Walcha, *Meissen Porcelain*, pp. 16–19, 44–45. For an early account of the discovery and development of Meissen porcelain, see the reprint of an 1810 edition published at Meissen: C. B. Kenzelmann, *Historische Nachrichten über die Königliche Porzellan-Manufaktur zu Meissen, und deren Stifter Johann Friedrich Freiherrn von Böttger* (Leipzig: Zentralantiquariat der Deutschen Demokratischen Republik, 1977).

¹²⁹ Quoted in Rawson, *Ceramics*, p. 64.

There is a certain irony in the consideration that they did so as a direct consequence of the triumphal expansion of their ancient trade in pottery into the new, predatory marketplace of Europe.

PORCELAIN AND CROSS-CULTURAL EXCHANGE IN THE ECUMENE

From the early centuries of the Common Era, porcelain generally ran a distant third behind imports of spices and silk to western Asia.¹³⁰ Porcelain, however, played an exceptional role in cross-cultural exchange between China and the rest of Asia, a role that other commodities intrinsically could not perform. Spices not only came from various parts of Asia, they naturally were intended for immediate use and consumption; although they were seen as possessing pharmacological and social significance, such meanings were imposed by consumers and were not intrinsic to the nutmeg, cinnamon, and pepper.¹³¹ Silk was regarded as indispensable for elite apparel and for employment in religious ritual in Roman and Byzantine Christianity, but China lost its silk monopoly by the sixth century, when other countries obtained the technology of sericulture. Moreover, silk exported from China was often plain and in the form of yarn.¹³² Chinese silks with embroidered designs conveyed something about Chinese culture, but they were sometimes unwoven and recycled, and like all textiles they were subject to relatively rapid deterioration if not kept in tombs, reliquaries, and shrines.¹³³

In contrast, porcelain was a Chinese monopoly that was always exported in finished form and could not be recycled. Easy to break yet hard to destroy, it retained its color and decoration perfectly, even after centuries at the bottom of the sea.¹³⁴ It invariably conveyed cul-

¹³⁰ See Michael Loewe, "Spices and Silk: Aspects of World Trade in the First Seven Centuries of the Christian Era," *Journal of the Royal Asiatic Society of Great Britain and Ireland* 2 (1971): 166–79; A. D. H. Bivar, "Trade between China and the Near East in the Sasanian and Early Muslim Periods," in *Pottery and Metalwork in T'ang China*, pp. 1–11.

¹³¹ On the significance of spices, see J. Innes Miller, *The Spice Trade of the Roman Empire* (Oxford: Oxford University Press, 1969); Wolfgang Schivelbusch, *Tastes of Paradise: A Social History of Spices, Stimulants, and Intoxicants*, trans. David Jacobson (New York: Random House, 1993).

¹³² Liu Xinru, "Silks and Religion in Eurasia, c. A.D. 600–1200," *Journal of World History* 6 (1995): 25–48.

¹³³ See Hattie Mae Nixon and Ellen Johnston Laing, "Recycled Chinese Textiles in the University of Oregon Museum of Art," *Orientations* 14 (1983): 25–37.

¹³⁴ On the fragility and durability of porcelain, see Carswell, "Blue-and-White Porcelain," p. 22. Some 190,000 porcelain plates and bowls recovered in excellent condition from Dutch shipwrecks of c. 1645 and c. 1752 were auctioned in London for about £10,000,000 in the 1980s. See Colin Sheaf and Richard Kilburn, *The Hatcher Porcelain Cargoes: The Complete Record* (Oxford: Phaidon, 1988), pp. 7–11.

tural meaning in its shapes and decoration, although often this was confusedly (if creatively) apprehended by foreign patrons, most strikingly in the case of the peoples of maritime Southeast Asia. Moreover, spices and silk went on a one-way journey, from east to west, at the end of which the spices were consumed and the silks frayed, faded, and finally vanished. Porcelain, however, not only endured but also played a central part in reciprocal cultural influence throughout the ecumene.¹³⁵ It was the principal material vehicle for the assimilation and transmission of cultural themes across immense distances. Chinese porcelain artists often adapted alien forms and decoration for their products, which were then exported to the very foreign realms where those forms and decoration had originated generations before. Thus, a Sinicized version of foreign artistic motifs would be imitated by craftsmen half a world away, who had no suspicion that they were heirs of the cultural tradition that had first inspired what they were now emulating.

The history of the lotus design illustrates this remarkable circuit of cross-cultural exchange.¹³⁶ Persian earthenware potters of the Il-Khanid period (1258–1353) copied undulating lotus scrolls from the borders of Chinese plates, unaware that the foliage was a mutation of acanthus patterns and vine scrolls carved on classical temples of the Middle East in the Hellenistic period (323–30 B.C.E.). The acanthus and vine motifs had been transferred in Sassanian Persia (224–651 C.E.) from the Greek temples to silver vessels, which merchants then traded eastward along the silk road. In oasis communities on the caravan route, the Hellenistic designs merged with Buddhist artistic themes that had migrated from India since their origin there hundreds of years earlier. By the sixth century the distinctive lotus design resulting from this encounter appeared as sculpted decoration in Buddhist cave temples at Yungang in Shanxi Province, northern China.¹³⁷ Generations later,

¹³⁵ On the significance of the ecumene as a framework for cross-cultural exchange, see Marshall G. S. Hodgson, *Rethinking World History: Essays on Europe, Islam, and World History*, ed. Edmund Burke III (Cambridge: Cambridge University Press, 1993), p. 17.

¹³⁶ On the following, see Rawson, *Chinese Ornament*, pp. 33–88; also Alois Riegel, *Problems of Style: Foundations for a History of Ornament*, trans. Evelyn Kain (Princeton: Princeton University Press, 1992), pp. 187–206.

¹³⁷ On connections between Persia and China, see Jane Gaston Mahler, *The Westerners among the Figurines of the T'ang Dynasty of China* (Rome: Instituto Italiano per il Medio ed Estremo Oriente, 1959), pp. 13–20. On the caves, see Roderick Whitfield and Anne Farrer, *Caves of the Thousand Buddhas: Chinese Art from the Silk Route* (London: British Museum Press, 1990). On the significance of the lotus in Indian and Chinese Buddhism, see Jack Goody, *The Culture of Flowers* (Cambridge: Cambridge University Press, 1993), pp. 326–27, 335, 354.

Chinese craftsmen adopted the design for ornamentation of vessels in silver and then ceramics. When merchants exported porcelain pieces with lotus decoration to Persia in the fourteenth century, potters there copied the foliage onto their earthenware. Two hundred years later the lotus appeared so often on Chinese blue-and-white vessels in Europe that botanists referred to it as the "porcelain flower."¹³⁸

Porcelain thus played a central role in the transmission of a renowned artistic theme from region to region (from the Middle East to China and back again) and from medium to medium (from architecture to silverwork to sculpture to silverwork to porcelain to earth-eware). Nor did the motif's pilgrimage stop there, for once Persian potters had painted the lotus design onto a plate or bowl, craftsmen adopted it as ornamentation on textiles and buildings. Because ceramic workers in Persia (as well as in Europe) were mainly tilemakers, transfer of a design from utensils to architecture was commonplace. Thus, potters decorated tiles on the Masjid-i-Jami, a sixteenth-century mosque in Kirman, with patterns of lotus blossoms and Chinese plum (or prunus) branches.¹³⁹

Since clay is an abundant and malleable substance, pottery served as an inexpensive, ubiquitous medium for the assimilation of techniques and designs from work in other materials.¹⁴⁰ Ceramic vessels often functioned as down-market substitutes for wares made of gold, silver, and bronze. In China, burial pottery emerged in the Zhou period in imitation of costly bronze pieces, and in the Han period families of middling rank increasingly used earthenware vessels painted to resemble bronze and lacquer as funerary goods.¹⁴¹ In the Tang dynasty potters imitated forms derived from western Asiatic metal and glass imports, and in the Song they fashioned porcelain vessels in the shape of precious silverwork from Persia.¹⁴² In fourteenth-century Japan, Long-

¹³⁸ Donald F. Lach, *Asia in the Making of Europe*, vol. 2, *A Century of Wonder* (Chicago: University of Chicago Press, 1970), p. 23.

¹³⁹ Whitman, "Persian Blue-and-White Ceramics," 1:125; Hodges, "The Technical Problems of Copying Chinese Porcelains in Tin Glaze," p. 82.

¹⁴⁰ Alan Caiger-Smith, "Continuity and Innovation in Ceramics," TOCS 58 (1993-94): 59. On pottery's facility for imitation, see an eighteenth-century Chinese connoisseur's comment in Bushell, *Description of Chinese Pottery and Porcelain*, p. 6.

¹⁴¹ Vainker, *Chinese Pottery and Porcelain*, p. 36; Rosemary E. Scott, "Archaism and Invention: Sources of Ceramic Design in the Ming and Qing Dynasties," in *New Perspectives on the Art of Ceramics in China*, ed. George Kuwayama (Los Angeles: Los Angeles County Museum of Art, 1992), p. 88. On burial and pottery, see Albert E. Dien, "Chinese Beliefs in the Afterworld," in *The Quest for Eternity: Chinese Ceramic Sculptures from the People's Republic of China* (exh. cat.) (Los Angeles: Los Angeles County Museum of Art, 1987), pp. 1-15.

¹⁴² Vainker, "Ceramics for Use," in *The British Museum Book of Chinese Art*, p. 231; Jessica Rawson, *The Ornament on Chinese Silver of the Tang Dynasty* (A.D. 618-906) (London: British Museum Occasional Papers, 1982), p. 23.

quan greenwares replaced bronze vessels, prompting a Japanese monk to declare, “These products of heaven are deeply loved. Their lustrous and glossy appearance is comparable to that of jade. With green censers by our sides, who needs those big bronze incense tripods?”¹⁴³

During the Song period the Chinese elite came to regard gold vessels as impairing the natural flavor of food, and they increasingly used porcelain copies at meals.¹⁴⁴ Koranic tradition condemned those who ate and drank from silver and gold, so Chinese wares served as an elegant substitute in Islamic lands. The throne room of Süleyman the Magnificent (r. 1520–66) of the Ottoman empire was embellished with precious metals, yet the sultan and his viziers dined from wooden spoons and blue-and-white porcelain.¹⁴⁵ In 1563, when Pius IV asked his cardinals to contribute their silver table services to fund defense of Italy against the Turks, a Portuguese cleric urged his colleagues to purchase porcelain from Lisbon, “as blue as sapphire and as white as alabaster.”¹⁴⁶ During the English Civil War (1642–49) aristocratic families melted down a great deal of their silver plate, and when peace came with the Restoration, they replaced their services with Delft imitations of porcelain.¹⁴⁷ According to the Duc de Saint-Simon, when Louis XIV in 1709 commanded his aristocrats to turn over their silver plate to support the army during the War of the Spanish Succession (1701–14), they rushed to boutiques for tin-glazed imitations of their accustomed table settings. This paved the way for their conversion to porcelain within a few decades.¹⁴⁸

¹⁴³ Quoted in Jessica Harrison-Hall, “Representational Longquan Ware: The Making and Function of Yuan and Ming Dynasty Ceramics,” *Apollo* 145 (1997): 33.

¹⁴⁴ Michael Freeman, “Sung,” in *Food in Chinese Culture: Anthropological and Historical Perspectives*, ed. K. C. Chang (New Haven: Yale University Press, 1977), p. 173.

¹⁴⁵ On Koranic condemnation, see Richard Ettinghausen, *Medieval Near Eastern Ceramics in the Freer Gallery of Art* (Washington, D.C.: Smithsonian Institution, 1960), p. 4. On Süleyman’s porcelain, see Julian Raby and Ünsal Yücel, “Chinese Porcelain at the Ottoman Court,” in *Chinese Ceramics in the Topkapi Saray Museum, Istanbul*, ed. John Ayers, catalogue by Regina Krahl, 3 vols. (London: Sotheby’s Publications, 1986), 1:27–54. On Süleyman’s opulence and wooden utensils, see Corneille Duplicius de Schepper, “Missions diplomatiques de Corneille Duplicius De Schepper (1533–34),” ed. Baron de Saint-Genois and G. A. Yssel de Schepper, *Mémoires de l’Académie Royale des Sciences, des Lettres et des Beaux-Arts de Belgique* 30 (1857): 170, 172.

¹⁴⁶ Quoted in Charles R. Boxer, “Carreira and Cabotagen: Some Aspects of Portuguese Trade in the Indian Ocean and the China Sea, 1500–1650,” *Renaissance and Modern Studies* 30 (1986): 46.

¹⁴⁷ Paston-Williams, *The Art of Dining*, p. 189.

¹⁴⁸ *Mémoires complets et authentiques du Duc de Saint-Simon*, ed. M. Chéruel, 14 vols. (Paris: Hachette, 1856), 7:26. In the principal English translation of Saint-Simon, *faience*, the term for the tin-glazed earthenware purchased in 1709, is rendered as “porcelain” and *les boutiques* as “china shops”; see *Historical Memoirs of the Duc de Saint-Simon*, ed. and trans. Lucy Norton, 3 vols. (London: Hamish Hamilton, 1967), 1:441.

Ceramics adopted and transmitted artistic symbols, themes, and shapes from all other media, especially jade, lacquer, sculpture, metal-work, coins, textiles, engravings, woodblock prints, and painting. Decorative patterns and shapes journeyed from medium to medium, from country to country, were adapted to different cultures, took on innovative readings, and promiscuously mingled cultural symbols. While China and its porcelain had a dominant role in this far-reaching exchange, the ecumene as a whole collaborated in the creation of a ceramic culture and visual language that in some measure transcended regions and peoples.

Two kinds of flasks illustrate the remarkable fusion of influences typical of this process. *Kendi* is a Malay word deriving from the Indian *kundika* (water pot) and denoting a metallic vessel used for ritual ablution and drinking since the third century B.C.E. With a bulbous body and a long, narrow neck, the flask was designed so that it would not touch the drinker's lips. Along with other ritual paraphernalia associated with Hinduism and Buddhism, it spread into mainland Southeast Asia by the early centuries of the Common Era.¹⁴⁹ Potters first copied *kendi* into porcelain in Tang China, where Confucian scholars used the vessels as water-droppers in calligraphy. Merchants sold miniature Chinese versions of the ware in the Philippines and Java, where tribes incorporated them in marriage ceremonies, burial rites, and folk divination. A Chinese *kendi* exported to Malaysia in the sixteenth century carried decoration of Buddhist auspicious symbols and Islamic inscriptions.¹⁵⁰ China also exported *kendi*, often in fanciful animal forms, to Japan and western Asia, where artisans copied them in earthenware in the seventeenth century. German potters also replicated the zoomorphic *kendi*, sometimes embellished with Dutch versions of Chinese designs.¹⁵¹ The porcelain collection of the Ottoman sultans included seven Ming elephant *kendi* equipped with silver-gilt mounts. Shah Abbas I (r. 1588–1629) of the Safavid dynasty of Persia

¹⁴⁹ A. K. Coomaraswamy and F. S. Kershaw, "A Chinese Buddhist Water Vessel and Its Indian Prototype," *Artibus Asiae* 3 (1928–29): 122–41. On the spread of Indian religious and artistic influence to Southeast Asia and China, see Himanshu P. Ray, *The Winds of Change: Buddhism and the Maritime Links of Early South Asia* (Delhi: Oxford University Press, 1994), pp. 87–161.

¹⁵⁰ Khoo Joo EE, *Kendi: Pouring Vessels in the University of Malaya Collection* (Singapore: Oxford University Press, 1991), pp. 21–26; *Treasures from the National Museum, Singapore*, ed. Eng-Lee Seok Chee (Singapore: Singapore National Museum, 1987), pp. 116–17.

¹⁵¹ Michael Sullivan, "Chinese Export Porcelain in Singapore—II," *Oriental Art* 4 (1958): 18–21; Yolande Crowe, "Aspects of Persian Blue and White and China in the Seventeenth Century," *TOCS* 44 (1979–80): 18; J. G. Lee, "Kraak and Kendi," *Brooklyn Museum Bulletin* 19 (1958): 9–11.

collected several sorts of *kendi*, including one shaped like an elephant and decorated with carnations. In the seventeenth century Persian potters translated the vessel into a hookah or smoking pipe (*kendi-qalian*) for tobacco.¹⁵² In the course of this remarkable peregrination, the *kendi* shed all connections with Indian religious ritual and became instead a utensil and curio for the elite of various cultures.

The vessel known as the “pilgrim flask” (or *bianhu*, “flattened flask,” in Chinese) traced a similarly wide circuit. An early version appeared in Nabatean pottery in Petra (now in Jordan) in the second century B.C.E., and the shape—a tapering neck and compressed moon-shaped body—resurfaced in Mesopotamian and Roman pottery. Early Christian pilgrims employed small replicas for carrying holy water and sanctuary lamp oil. Merchants traveling through Central Asia into China in the Tang period sold Persian metalwork pilgrim flasks with Hellenistic decoration, including acanthus patterns, dancing girls, and piping boys. Chinese craftsmen replicated the flasks in porcelain. Embellished with designs from Greece and Persia, they became prestige items as funerary goods in the Song period.¹⁵³

In later centuries pilgrim flasks made their way back from China to western Asia. Jingdezhen potters in the sixteenth century decorated one, probably made to order for Portuguese Christians in India, with a choir of angels at Bethlehem.¹⁵⁴ Persian potters produced a blue-and-white earthenware flask in 1523, copied from a Chinese pilgrim flask of a century earlier; they adorned it with a nightingale on a rosebush, perhaps an adaptation of a Chinese phoenix on a plum branch. Merchants traded Middle Eastern copies of Chinese flasks by way of Ottoman Anatolia to central Italy, where potters in sixteenth-century Umbria reproduced them in blue-and-white earthenware.¹⁵⁵ Count John Casimir of Bavaria had an earthenware flask made for him at Nîmes in 1581, decorated with his coat of arms and anti-Catholic caricatures, including monkeys in ecclesiastical vestments. Philip II of Spain ordered officials in Manila to commission several blue-and-white pilgrim flasks for his porcelain collection: potters in Jingdezhen painted them with a

¹⁵² Julian Thompson, “Blue and White at Topkapi,” *Antique Collector* 62 (1991): 70; Whitman, “Persian Blue-and-White Ceramics,” 1:195–203.

¹⁵³ Geza Fehervari, “Near Eastern Wares under Chinese Influence,” in *Pottery and Metal-work in T’ang China*, p. 29; Willetts, *Chinese Art*, 2:472–73; William Watson, *Tang and Liao Ceramics* (New York: Rizzoli, 1984), pp. 145–47.

¹⁵⁴ Basil Gray, “The Export of Chinese Porcelain to India,” *TOCS* 36 (1964–66): 30; Regina Krahf, “A New Look at the Development of Chinese Ceramics,” *Orientations* 23 (1992): 68.

¹⁵⁵ Whitman, “Persian Blue-and-White Ceramics,” 1:90–92; Le Corbeiller, “A Medici Porcelain Pilgrim Flask,” pp. 119–26.

Chinese sage in a landscape, a border of lotus scrolls, and a central medallion with the royal coat of arms of Castile and León, probably copied from a Spanish coin. Finally, the Meissen manufactory in the early eighteenth century produced *pilgerflaschen*, decorated with Chinese floral designs and with landscape scenes copied from Japanese lacquerwork.¹⁵⁶

The history of *kendi* and pilgrim flasks suggests how ceramic vessels lend themselves to a bewildering cross-fertilization of influences. Styles, shapes, and decorative themes wandered as freely and as far as any Buddhist or Muslim pilgrim. The concepts informing them generally remained behind, however, for material objects traveled more easily across cultural frontiers than abstractions. Potters appropriated styles and motifs heedlessly, with little regard for the indigenous significance of the exotic vessel or emblem. In the Chinese tradition, multivalent meanings clustered around symbols; for example, ideas of spiritual attainment, female sexuality, and dynastic loyalty were focused respectively on the lotus, peony, and winter-flowering plum. In the West, severed from their roots, these plant forms generally were reduced to mere embellishment.¹⁵⁷ The Dutch treatment of Chinese compositions illustrates this process. VOC purchases of Chinese merchandise declined in the 1640s as a result of war between the Ming and the Manchu; accordingly, the Delft potters shifted from tile manufacturing to producing facsimiles of porcelain, complete with renderings of Chinese dynastic reign marks (*nianhao*), a practice the Dutch potters adopted from Persian imitations of porcelain because they wanted to sell their wares in the Middle East.¹⁵⁸ They also painted them with fanciful versions of Chinese themes, such as the lotus and peony, so that the *porcelyn* (as they called it) mimicked the appeal of the foreign product. The Delft potters thus developed a make-believe Chinese style that proved so popular that Jingdezhen craftsmen of the Qing

¹⁵⁶ Penelope Hunter-Stiebel, "Faience—Prelude to Porcelain," *Apollo* 106 (1977): 358–63; Howard and Ayers, *Masterpieces of Chinese Export Porcelain*, p. 34; Walcha, *Meissen Porcelain*, pp. 38–39; Hugh Honour, *Chinoiserie: The Vision of Cathay* (London: John Murray, 1961), p. 104.

¹⁵⁷ See Rawson, *Chinese Ornament*, pp. 31–32; Goody, *The Culture of Flowers*, pp. 370–71. On multiple meanings in Chinese decoration, see Jan Stuart, "Layers of Meaning," in *Joined Colors: Decoration and Meaning in Chinese Porcelain: Ceramics from Collectors in the Min Chiu Society, Hong Kong* (exh. cat.), ed. Louise Allison Cort and Jan Stuart (Washington, D.C.: Smithsonian Institution, 1993), pp. 33–61.

¹⁵⁸ Volker, *Porcelain and the Dutch East India Company*, pp. 66–67; Lane, *Later Islamic Pottery*, p. 89. On VOC problems with Chinese trade in the seventeenth century, see Leonard Blussé, "No Boats to China: The Dutch East India Company and the Changing Pattern of the China Sea Trade, 1635–1690," *Modern Asian Studies* 30 (1996): 51–76.

dynasty (1644–1911) later imitated the novel “chinoiserie” patterns when their porcelain reentered Western and Middle Eastern markets in the late seventeenth century.¹⁵⁹

In effect, the end result of this cultural encounter was a creative imagining of China, a way of assimilating and domesticating it. Chinoiserie designs, especially those with figural and landscape elements, acted as filters that reduced the complexity of Chinese visual culture to stereotyped constituents, thereby rendering it picturesque and accessible rather than potent and enigmatic. Painted in pseudo-Chinese style and planted in a European perspective, the lotus retreated from Buddhism, the peony lost its sexual charge, and the flowering plum shed its links to political alienation. In like fashion, imperious Confucians turned into quaint mandarins, solitary Daoists became affable gentlemen, and the Bodhisattva Guanyin (as an icon of fertility) assumed the guise of the Madonna with Child.¹⁶⁰ Chinese potters reinforced this benign, reductive image of their own culture when they replicated the Western fantasy of China on their porcelain exports. In the end, something was gained as well as lost, for the circuit of cross-cultural exchange promoted both innovation and misreading. Immense simplification inevitably took place when foreign craftsmen reformulated artistic representations of Chinese culture, but that very simplification resulted in the creation of new decorative patterns with international currency. The world grew closer together through mutual misunderstanding.

Porcelain and its imitations played a primary role in cross-cultural exchange because potteries pursued the strategy of replicating foreign artistic forms to win customers in remote markets. From the seventh century to the sixteenth, the principal circuit of exchange ran between China and the Middle East; the circuit thereafter expanded to encompass the West, including European settlements in the Americas and

¹⁵⁹ C. J. A. Jörg, “The Interaction between Oriental Porcelain and Dutch Delftware,” *Orientations* 14 (1983): 10–15; Richard S. Kilburn, *Transitional Wares and Their Fore-runners* (exh. cat.) (Hong Kong: Oriental Ceramic Society of Hong Kong, 1980). On Jingdezhen and foreign markets, see Stephen Little, “Economic Change in Seventeenth-Century China and Innovations at the Jingdezhen Kilns,” *Ars Orientalis* 26 (1996): 47–54. Chinoiserie is an artistic style reflecting Chinese influence as manifest in fanciful representations of Chinese culture, especially in the use of elaborate decoration and intricate patterns.

¹⁶⁰ For illustrations, see Madeleine Jarry, *Chinoiserie: Chinese Influence on European Decorative Art, 17th and 18th Centuries* (New York: Vendome Press, 1981); Honour, *Chinoiserie*; Howard Davis, *Chinoiserie: Polychrome Decoration on Staffordshire Porcelain, 1790–1850* (London: Rubicon Press, 1991).

Africa.¹⁶¹ Chinese potters copied lotus scrolls and Persian silverwork in the eighth century, Arabic calligraphy and Islamic prayer screens in the fourteenth, biblical illustrations and Dutch flagons in the eighteenth. Just as enterprising, Middle Eastern and Western potters reproduced the Chinese decorative repertoire and even devised their own versions of it to compete with Chinese imports. Completing the circuit, the chinoiserie patterns migrated to China, where craftsmen copied them for marketplaces in the Middle East and Europe. Global patterns of trade thus fostered the recycling of cultural fantasies, the creation of hybrid wares, and the emergence of a common visual language.

Turkish potters at Iznik (east of Istanbul) in the early sixteenth century combined Chinese decoration, Ottoman court designs, and European silverwork models to produce wares that appealed to customers throughout the Mediterranean.¹⁶² Venetian potters adopted floral patterns from Iznik pottery and designs *alla porcellana* from Chinese vessels, while Chinese craftsmen replicated Venetian glass vases in porcelain.¹⁶³ Potters in Florence decorated a pilgrim flask with a grotesque mask from ancient Rome and tulips from Iznik ware. At the same time, Italian earthenware influenced Iznik pottery, which sometimes combined medallion portraits in Renaissance *istoriato* style with spiral scrolls derived from the Ottoman sultan's imperial monogram (or *tughra*).¹⁶⁴ From the late sixteenth century Spanish galleons carried tens of thousands of porcelain pieces from Manila to Acapulco, inspiring Mexican potters in Puebla to produce their own distinctive blue-and-white earthenwares in order (as an eighteenth-century priest boasted) "to emulate and equal the beauty of the wares of China."¹⁶⁵

¹⁶¹ See Carl Robert Quellmalz, "Chinese Porcelain Excavated from North American Pacific Coast Sites," *Oriental Art* 18 (1972): 148–54; Julia B. Curtis, "Chinese Export Porcelain in Eighteenth-Century Tidewater Virginia," *Studies in Eighteenth-Century Culture* 17 (1987): 119–44; Jane Klose, "Excavated Oriental Ceramics from the Cape of Good Hope, 1630–1830," *TOCS* 57 (1992–93): 69–80.

¹⁶² J. A. Pope, "Chinese Influence on Iznik Pottery: A Re-Examination of an Old Problem," in *Islamic Art in the Metropolitan Museum of Art*, ed. R. Ettinghausen (New York: Metropolitan Museum of Art, 1972), pp. 99–124; Nurhan Atasoy and Julian Raby, *Iznik: The Pottery of Ottoman Turkey* (London: Alexandria Press, 1994).

¹⁶³ Daphne Carnegy, *Tin-Glazed Earthenware from Maiolica, Faience and Delftware to the Contemporary* (London: Adam and Charles Black, 1993), p. 33; T. Harrison Tidswell, "The Influence of Oriental Porcelain on Western Ceramics," *Apollo* 110 (1979): 212.

¹⁶⁴ Catherine Hess, *Italian Maiolica: Catalogue of the Collections* (Malibu, Calif.: J. Paul Getty Museum, 1988), pp. 120–23; James W. Allan, *Islamic Ceramics* (Oxford: Ashmolean Museum, 1991), p. 68.

¹⁶⁵ Quoted in Mudge, "Hispanic Blue-and-White Faience in the Chinese Style," p. 53. On Puebla ware, see Edwin A. Barber, *Mexican Maiolica in the Collection of the Hispanic*

Japanese potters in the seventeenth century decorated blue-and-white beer mugs for the Amsterdam market with Dutch versions of Chinese lotus scrolls and with human figures drawn from Japanese traveling puppet shows, while Japanese officials placed orders with Delft and Chinese potteries, providing wooden models of the wares they desired.¹⁶⁶ In the late seventeenth century a French earthenware ewer from a Nevers pottery had a shape that ultimately derived from Middle Eastern metalwork, a color scheme (blue-and-white) from China, and ornamentation from diverse sources, including classical antiquity (a coiled serpent), early Christianity (a winged angel), and China (exotic birds).¹⁶⁷

Jingdezhen craftsmen in 1690 made a plate decorated with a scene of a tax riot in Rotterdam, copied from a Dutch commemorative coin, with representations of the Eight Precious Objects of Buddhism around the central medallion. Chinese plates of 1722, commissioned by Dutch merchants, satirized the financial debacle of the South Sea Bubble, accompanied by advertisements for Delft earthenware and with human figures derived from the Italian *Commedia dell'arte*, a fashion copied from Meissen porcelain. Decoration on a tin-glazed earthenware platter from Nîmes in 1736 included a scene of Venus and Adonis, reproduced from a French engraving, circled by a border of Chinese pomegranate vines taken from cottons printed for Dutch merchants in India.¹⁶⁸ Pottery produced at Chelsea in England in the early eighteenth century imitated Meissen porcelain wares, which themselves imitated Japanese imitations of Chinese vessels.¹⁶⁹ Chinese copies of Dutch wares included marks signifying Delft manufacture, while a

Society of America (New York: Hispanic Society of America, 1915). On the Manila-Acapulco trade route, see William Lytle Schurz, *The Manila Galleon* (New York: E. P. Dutton, 1939). The porcelain was transported overland from Acapulco to Veracruz by way of Puebla, southeast of Mexico City.

¹⁶⁶ T. Volker, "Two Early Blue-and-White Japanese Jugs," *Oriental Art* 1 (1955): 3–5; C. J. A. Jörg, "Exoticism in Japan—Japanese Interest in Dutch Ceramics and Other Curiosities," *TOCS* 58 (1993–94): 11; Stephen Little, *Chinese Ceramics of the Transitional Period: 1620–1683* (exh. cat.) (New York: China House Gallery, China Institute in America, 1983), p. 7.

¹⁶⁷ Olga Ruggio, Clare Vincent, and Alice M. Zrebiac, "French Decorative Arts during the Reign of Louis XIV, 1654–1715," *Metropolitan Museum of Art Bulletin* 46 (1989): 41.

¹⁶⁸ Makiko Ichiura, "The Helena Woolworth McCann Collection of Chinese Trade Porcelain at the Metropolitan Museum of Art," *Arts of Asia* 5 (1975): 42; Hunter-Stiebel, "Faience—Prelude to Porcelain," pp. 361–63.

¹⁶⁹ Oliver Impey, "Japanese Export Art of the Edo Period and Its Influence on European Art," *Modern Asian Studies* 18 (1984): 695. On Meissen's use of Japanese models, see Masaka Shono, *Japanisches Aritaporzellan im sogenannten 'Kakiemonstil' als Vorbild für die Meissener Porzellanmanufaktur*, trans. Richard Rasch and Rainer Rückert (Munich: Editions Schneider GmbH, 1973), pp. 16–35.

Chinese copy of a Meissen copy of a Japanese dish came with a forged Meissen mark.¹⁷⁰ A Chinese plate of 1750 decorated with a painting of a knight and his squire, surrounded by Chinese scenery and birds, represented a four-step adaptation: it derived from a pattern on a Meissen porcelain service of 1742 that replicated a Dutch engraving, which in turn copied a woodprint in a French translation of Cervantes' *Don Quixote*.¹⁷¹ A Chinese tureen of the late eighteenth century had a similarly tangled genealogy: its precursor was a Staffordshire earthenware variation on a Sèvres porcelain vessel, which itself stemmed from a piece of French silverwork whose shape originated in engravings of the pottery of classical antiquity.¹⁷²

To be sure, tracing such connections induces a certain vertigo, but the exercise conveys the extent to which artists, craftsmen, and entrepreneurs around the world during the early modern period were relaying, integrating, and generating cultural forms. The history of the flowering-tree design, a counterpart to the earlier creation of the lotus motif, exemplifies this circuit of exchange.¹⁷³ Sometime after the fifteenth century, Persian painters, in adapting themes from blue-and-white porcelain, translated the blossoming plum (*mei hua*) into a flowering tree, a theme that soon appeared on Persian earthenware and Indian cotton fabric. In the seventeenth century European potters and textile producers adopted the Persian chinoiserie design, after which it mutated into the most characteristic of the patterns known as chintz (from Hindi *chint*, "many colored"). Sending the design back to its source, English merchants commissioned Indian weavers to produce cottons with chintz patterns. In the eighteenth century the merchants even sent drawings of the Indo-European chinoiserie fantasy to China as instructions for porcelain artists. The flowering-tree motif also surfaced on Japanese and Meissen porcelain of the eighteenth century and as an element in the famous blue-and-white Willow pattern, the most popular ornamentation ever devised for tableware.

The flowering-tree decoration is representative of ceramic develop-

¹⁷⁰ Tidswell, "The Influence of Oriental Porcelain on Western Ceramics," pp. 214–15.

¹⁷¹ Howard and Ayers, *Masterpieces of Chinese Export Porcelain*, pp. 27, 49, 55.

¹⁷² Jessica Harrison-Hall, "A Meeting of East and West: Print Sources for Eighteenth-Century Chinese Trade Porcelain," *Apollo* 139 (1994): 3–6.

¹⁷³ On the following, see John Irwin, "The Chinese Element in Indian Chintz," in *The Westward Influence of the Chinese Arts*, pp. 30–32; Michael Snowdin and Maurice Howard, *Ornament: A Social History since 1450* (New Haven: Yale University Press, 1996), p. 202; Mary Gardner Neill, "The Flowering Plum in the Decorative Arts," in *Bones of Jade, Soul of Ice: The Flowering Plum in the Decorative Arts*, ed. Maggie Bickford (New Haven: Yale University Art Gallery, 1985), pp. 193–244; Robert Copland, *Spode's Willow Pattern and Other Designs after the Chinese* (London: Rizzoli, 1980).

ment in that it sprang from the intersection of art and commerce, and from the long-distance cooperation of anonymous craftsmen in diverse media. Most significantly, it is impossible to say which culture was responsible for creation of the celebrated design, since China, India, the Middle East, and Europe all played significant roles in its thematic development and geographic expansion.

Porcelain artistry of the seventeenth and eighteenth centuries suggests that the various regions of the ecumene, across the countless boundaries dividing them, collaborated in the formation of a common cultural tradition. Although the taste of elites played a role in shaping it, the tradition stemmed far more from the ingenuity and enterprise of the potters themselves, in China, Japan, the Middle East, and Europe. By the end of the eighteenth century craftsmen around the world had created a collective visual language, a *koine* of ceramic art. The potters of Lisbon acclaimed their copies of Chinese porcelain as examples of “the pilgrim art,” products of a globally integrated circuit of aesthetic and commercial exchange. Given the peripatetic and imitative nature of ceramics, extended and intensified by the exemplary status of porcelain, potteries active in long-distance trade shared a common legacy, however provisional and indiscriminate. The lotus scroll and the flowering tree, *kendi* and pilgrim flasks, tureens and platters did not represent either high art or monumental achievement. At their best, they embodied a novel and creative cultural synthesis, enhanced by the charm of surprising associations; at their worst, they epitomized a sort of international kitsch, a harbinger of the tourist art of a later century. In neither case did they engage the attention of intellectuals striving to comprehend the emergence of a new global consciousness in the early modern era.¹⁷⁴ Nevertheless, porcelain and its imitations provide the first and most widespread material evidence for sustained cultural encounter on an ecumenical scale, perhaps even for intimations of truly global culture.

¹⁷⁴ See John M. Headley, “The Sixteenth-Century Venetian Celebration of the Earth’s Total Habitability: The Issue of the Fully Habitable World for Renaissance Europe,” *Journal of World History* 8 (1997): 1–27.