

ASIA

IN WORLD HISTORY

BY JERRY H. BENTLEY

One of the most problematic geographical terms in the world historian's vocabulary is *Asia*. Greek mariners originally employed the term *Asia* to refer to lands east of the Aegean Sea, as opposed to *Europe*, the lands to the west. To scholars of medieval Europe, Asia referred generically to an amorphous and poorly known land east of the Nile River and the Mediterranean Sea. Meanwhile, in the lands now collectively and conventionally known as Asia, no one used the term *Asia* at all before about the mid-nineteenth century, when European imperialists introduced it to the region.¹

Contemporary efforts to define Asia as something other than a mere geographical expression have been largely unpersuasive. Perhaps the most impressive of these efforts is the erudite work of K. N. Chaudhuri, who views Asia as a collective embracing the Islamic heartlands, India, Southeast Asia, and China, along with the smaller societies that drew influence from their more powerful neighbors. The glue that holds Chaudhuri's Asia together is exchange—cultural, biological, and especially commercial exchange.² Besides linking the subregions of Asia, however, exchange also linked Chaudhuri's Asia as a whole to the Mediterranean basin, Europe, and sub-Saharan Africa. Thus it is impossible to take exchange as the principal criterion for the definition of Asia, since exchange points toward an integrated Eastern Hemisphere rather than a coherent conception of a coherent Asia.³

Although intrinsically vague and perhaps fatally flawed, the term *Asia* does not seem likely to disappear anytime soon. The task for historians and other scholars, then, is to find ways to discuss the experiences of Asian lands and investigate their roles in the larger world without implying that Asia forms a separate cultural or geographical zone out of communication with other world regions. One way to deal responsibly and realistically with Asian lands is to examine their connections with other societies. It goes without saying that interaction with the larger world is not the only important dimension of Asian history: the formation of complex societies, the building of states, and the development of cultural traditions within individual Asian lands also rank as fundamentally important themes in both Asian and world history. But a focus on interactions—particularly large-scale processes such as mass migrations, campaigns of imperial expansion,

and cross-cultural trade—can throw useful light on the development of individual Asian societies and can also help situate Asian experiences in the larger terrain of world history.⁴

It is impossible to understand the historical experiences of Asian peoples—or of European, African, American, or Oceanic peoples—except in the larger context of global history and the large-scale processes that human groups have set in motion. The original establishment of human communities in the eastern parts of the Eurasian landmass, for example, was the result of migrations by *Homo erectus* groups, whose ancestors ventured out of Africa as early as a million years ago, followed later by *Homo sapiens* groups as well. *Homo erectus* migrated to northern Arabia, Mesopotamia, Iran, northern India, Southeast Asia, China, and offshore islands as well. Recent archaeological analysis has shown that between 800,000

and 900,000 years ago, *Homo erectus* made water crossings of at least nineteen kilometers (almost twelve miles) to Flores Island in modern Indonesia.⁵ The remarkable wanderlust of this species that evolved in East Africa was responsible for the original introduction of human population into the lands now known as Asia.

Throughout history, peoples inhabiting Asian lands have interacted with their counterparts in other world regions. During the era of early complex societies, from about 3500 to 2000 B.C.E., contacts between Asian peoples and other inhabitants of the Eastern Hemisphere were irregular and sporadic, but nonetheless important.⁶ Commerce linked lands from Egypt in the west to the Indus River valley in the east, and especially brisk trade passed between the Sumerian city-states and Harappan society.⁷ Bronze metallurgy diffused from Mesopotamia to the Mediterranean basin in the west and the Indus River valley in the east, and later to East Asia as well. Domesticated horses enabled peoples speaking Indo-European languages to launch a migratory surge that eventually established communities of Indo-European speakers from Ireland to Central Asia. The recent discovery of desiccated but remarkably well preserved corpses of Caucasian individuals in China's Xinjiang province offers striking testimony to the mobility of the early Indo-European migrants.⁸

In the age of ancient societies, between about 2000 and 500 B.C.E., technological exchanges influenced the development of states and societies throughout the Eastern Hemisphere. After about 1700 B.C.E., for example, chariots with spoked wheels and techniques of chariot warfare spread from the Eurasian steppelands to Mesopotamia, North Africa, Central Asia, India, and China. This diffusion helps to account for developments as diverse as nomadic assaults on the Babylonian empire, the establishment of Indo-European communities in India, and the emergence of the Shang dynasty in China.

After about 1100 B.C.E. the technology of iron metallurgy also spread from Anatolia throughout Eurasia and Africa. Since iron was stronger than bronze—also more abundant and less expensive

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than copper and tin, the chief ingredients of bronze—the widespread availability of iron weapons had large political and military implications. The diffusion of iron metallurgy helps to account for the rise of the Assyrian empire in Mesopotamia and the establishment of the Zhou dynasty in China. It is difficult to trace cultural exchanges in the age of ancient societies, but it seems likely that beliefs, values, and ideas accompanied military technologies as they spread throughout the Eastern Hemisphere. The ruling classes of China's Western Zhou dynasty (1027–771 B.C.E.), for example, probably invited Zoroastrian magi from Persia to serve as religious and ritual specialists, and alphabetic writing certainly spread from Phoenicia to the Mediterranean basin, Mesopotamia, Persia, and northern India.⁹



Gifts for the Khan, "Les Livres Graun Caam."
Bodleian Library, Oxford

With the establishment of large-scale imperial states in the age of classical societies (500 B.C.E.–500 C.E.), interactions across Eurasia became more regular and systematic than ever before. The Roman empire in the Mediterranean basin, the Achaemenid, Seleucid, Parthian, and Sasanian empires in Southwest Asia, the Mauryan and Kushan empires in India, and the Han empire in China all brought relative order to large regions and fostered economic and cultural development within their territories. Commercial, biological, and cultural exchanges flowed readily throughout Eurasia and North Africa, profoundly influencing the development of all societies they touched. Best known of the trade routes were the overland silk roads that stretched from the Mediterranean basin to China, but sea lanes through the Mediterranean, the Red Sea, the Persian Gulf, the Indian Ocean, and the South China Sea also became busy avenues of commercial exchange. Commodities traded over the silk roads and sea lanes of classical times included silk from China, fine spices from Southeast Asia, pepper and gems from India, horses and jade from Central Asia, aromatics from Arabia, and glass, jewelry, and bullion from the Mediterranean basin.¹⁰

These trade routes of classical times offered opportunities for cultural and biological as well as commercial exchange. They facilitated the early spread of Buddhism from India to Iran, Central Asia, and China, as well as the early spread of Christianity from Palestine to the Mediterranean basin and Mesopotamia. Among the most explosive missionary religions of classical times was Manichaeism, which spread from the prophet Mani's Babylonian homeland to the Mediterranean basin, Southwest Asia, and northern India. These religious traditions all changed as they spread, adapting to the needs and interests of communities far from their lands of origin. They also absorbed elements from different traditions: Hellenistic ideas about a savior likely influenced the development of Mahayana Buddhism, and Mani explicitly sought to blend teachings from Zoroastrian, Buddhist,

and Christian traditions. But they deeply influenced the development of societies where they found adherents, and their remarkable early spread to distant lands testifies to the intensity of cross-cultural interactions and cultural exchanges among classical societies.¹¹

Indeed, cross-cultural interactions were systematic enough that disease pathogens accompanied trade goods and religious beliefs on the trade routes of classical times. Epidemics sparked by introduced pathogens may have reduced the populations of China and the Mediterranean basin by 25 percent: cross-cultural exchanges had strong potential to disrupt societies interacting with each other as well as to promote their economic and cultural development.¹²

The collapse of classical societies temporarily dampened but did not put an end to cross-cultural interaction. In the post-classical era (500–1000 C.E.) and the age of transregional nomadic empires (1000–1500 C.E.), conquerors, merchants, missionaries, pilgrims, diplomats, and other travelers took to the roads and sea lanes of the Eastern Hemisphere and linked the lands of the Eastern Hemisphere more tightly than ever before.¹³ During the postclassical era the Byzantine, Abbasid, and Tang empires served as political and economic anchors of exchange networks that fostered trade and communication throughout most of Eurasia and also touched medieval Europe and sub-Saharan Africa as well. During the following half-millennium the imperial states of Turkish peoples and the breathtaking conquests of Mongol armies facilitated direct travel and communication between lands as distant as Europe and China. During these eras the experiences of individual long-distance travelers come into clear focus for the first time in world history. Contemporary travel accounts and recent scholarship throw clear light on the influence of cross-cultural travelers like the Chinese pilgrim Xuanzang, the Venetian merchant Marco Polo, the Nestorian monk Rabban Sauma, the Moroccan jurist Ibn Battuta, and others as well.¹⁴

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influenced the experiences of individual societies as well as the development of the Eastern Hemisphere as a whole. Trade networks reached almost all regions of Eurasia and sub-Saharan Africa, and large volumes of commerce encouraged specialization of agricultural and industrial production. Under the Tang and Song dynasties, for example, Chinese peasants often turned from cereals to the cultivation of lychees or sugar for sale on the market or the production of silk textiles, porcelain, or laquerware for export. Similarly, Indian entrepreneurs cultivated pepper and produced cotton textiles for export, while Muslim merchants from Arabia, Persia, and India provided shipping and transportation services throughout the Indian Ocean basin. Chinese technological innovations, including most notably gunpowder and the compass, diffused throughout Eurasia and eventually changed forever the nature of warfare and maritime travel.¹⁵

As in earlier times, brisk trade encouraged cultural and biological exchanges among the societies of the Eastern Hemisphere. Manichaeism won converts among Turkish peoples in Central Asia and even established a foothold in China: a Manichaean community survived in the port city of Quanzhou until at least the sixteenth century, long after authorities had suppressed Manichaean communities in Southwest Asia and the Mediterranean

basin. Christianity spread to Central Asia and China as well as Western Europe: the Nestorian church based in Mesopotamia attracted the interest of Turkish merchants, who took their faith to China no later than the early seventh century, while missionaries from Rome worked to establish their version of Christianity securely in France, Germany, and the British Isles.

By the thirteenth century even Roman Catholic missionaries had ventured to India and China: they had limited success in their efforts to attract native converts, but they served sizable expatriate communities of European merchants. Persian Zoroastrians fleeing before Muslim conquerors established diaspora communities in India and China. Buddhism won a large following throughout East Asia and much of Southeast Asia as well. The most dynamic of the expanding religious traditions, however, was Islam, which spread rapidly from its Arabian homeland to north Africa, sub-Saharan East and West Africa, Southwest Asia, India, Central Asia, and the islands of Southeast Asia.¹⁶



The Jesuit Matteo Ricci in Chinese costume at court of Emperor Wan-Li, 1603. Frank Debenham, *Discovery and Exploration: an Atlas-history of Man's Journeys in the Unknown* (Geographical Projects Limited, London, 1960).

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Meanwhile, biological diffusions shaped the conditions of material life for peoples throughout the Eastern Hemisphere. Fast-ripening rice from Champa (Central Vietnam) increased grain yields in China, and bananas from Southeast Asia added calories to the diets of Bantu-speaking cultivators in sub-Saharan Africa. Among the most important biological diffusions of the millennium 500 to 1500 was the broad array of staple, vegetable, fruit, and industrial crops spread largely by Muslim agents from India and Southeast Asia to Southwest Asia and the Mediterranean basin. The transplants included hard wheat, sugar cane, sorghum, spinach, artichoke, eggplant, citrus fruits, bananas, coconuts, melons, cotton, indigo, and henna, among others. In combination, these plants led to enriched diets, increased agricultural production, demographic growth, and economic development throughout much of the Eastern Hemisphere.¹⁷

Other biological diffusions ravaged the populations of lands engaged in interaction. Most notable of the diseases that traveled the trade routes and touched off epidemics was bubonic plague, which raged throughout the Mediterranean basin in the sixth century and fueled a massive pandemic in much of Eurasia and North Africa in the fourteenth century.¹⁸ Whether they led to increased or diminished populations, biological diffusions clearly demonstrated that Asian, European, and African peoples did not live in separate worlds, but rather inhabited a vast, interconnected zone of communication and exchange in which developments in one region had influences throughout the Eastern Hemisphere.

During the early modern era (1500–1800), the establishment of genuinely global trade networks brought influences from the Americas as well as Europe and Africa to Asian societies. European merchants funneled American silver to Asian lands in exchange for silk, cotton, porcelain, pepper, spices, and other Asian products. This trade and the silver that accompanied it stimulated rapid economic development in Asian lands. American plants also made their way to Asian lands, and after about the mid-

seventeenth century maize, potatoes, tomatoes, peppers, peanuts, and other American crops helped underwrite rapid demographic growth, especially in the Ottoman empire, Mughal India, and China. Asian peoples also reflected the influence of European technologies, particularly ship designs and advanced firearms—based on gunpowder technologies that had originated in China and spread west after the eleventh century.¹⁹

Except in the Philippines, European peoples had little success in their efforts to establish Christianity in Asian lands, and even in the Philippines missionaries encountered misunderstanding and resistance to their message. Nevertheless, in China, India, and Japan, Roman Catholic missionaries served as agents of cross-cultural communication between Europe and Asia.²⁰



The oldest known printed map of West China in 1155. Top shows part of the Great Wall, and the dark lines are rivers.

Joseph Needham, with collaboration of Wang Ling, *Science and Civilization in China* (Cambridge University Press, 1959).

The formation of powerful national states and the process of industrialization strengthened European and Euro-American peoples in modern times (since 1800) with respect to their counterparts in Africa and Oceania as well as Asia. The unprecedented domination of the world by European and Euro-American peoples in the late nineteenth and early twentieth centuries demonstrated once again the significance of cross-cultural interactions for Asian societies. Armed with lethal weapons and increasingly effective technologies of transportation and communication, European and Euro-American peoples established their hegemony in Asia, Africa, and Oceania. By the late nineteenth century, European imperialists had colonized India, Southeast Asia, Africa, and Oceania, and the Ottoman empire and China escaped a similar fate largely because of jealousies among imperial powers.²¹

Even a quick historical glance makes it plain that Asia has never been a separate area out of contact and communication from other world regions. From earliest times to the present, large-scale processes of cross-cultural interaction have linked the various subregions of Asia and also connected Asia as a whole to the larger world. This does not mean that Asian history dissolves entirely into world history: there are many themes that call for historians to pay attention to the specific experiences of Asian lands and peoples, and they are important for the understanding of Asian societies as well as the larger world. Nevertheless, it is impossible to understand the development of Asian societies themselves except in the light of cross-cultural interactions that have touched all the world's peoples and helped to shape their societies. ■

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NOTES

1. Martin W. Lewis and Kären E. Wigen, *The Myth of Continents: A Critique of Metageography* (Berkeley: University of California Press, 1997); Rebecca E. Karl, "Creating Asia: China in the World at the Beginning of the Twentieth Century," *American Historical Review* 103 (1998): 1096–1118.
2. 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).
3. Jerry H. Bentley, *Old World Encounters: Cross-Cultural Contacts and Exchanges in Pre-Modern Times* (New York: Oxford University Press, 1993); "Cross-Cultural Interaction and Periodization in World History," *American Historical Review* 101 (1996): 749–70; and "Hemispheric Integration, 500–1500 C.E.," *Journal of World History* 9 (1998): 237–54.
4. For an alternative approach, see Carol Gluck, "Asia in World History," in Ainslie T. Embree and Carol Gluck, eds., *Asia in Western and World History: A Guide for Teaching* (Armonk, N.Y.: M. E. Sharpe, 1997), 199–216.
5. M. J. Morwood, P. B. O'Sullivan, F. Aziz, and A. Reza, "Fission-Trace Ages of Stone Tools and Fossils on the East Indonesian Island of Flores," *Nature* 392 (12 March 1998): 173–76.
6. For the periodization followed here see Bentley, "Cross-Cultural Interaction and Periodization in World History."
7. Shereen Ratnagar, *Encounters: The Westerly Trade of the Harappa Civilization* (Delhi: Oxford University Press, 1981); Philip L. Kohl, "The Balance of Trade in Southwestern Asia in the Third Millennium B.C.," *Current Anthropology* 19 (1978): 463–75; and Kohl, "The Use and Abuse of World Systems Theory: The Case of the 'Pristine' West Asian State," in C. C. Lamberg-Karlovsky, ed., *Archaeological Thought in America* (Cambridge: Cambridge University Press, 1989), 218–40.
8. E. N. Chernykh, *Ancient Metallurgy in the USSR*, trans. by S. Wright (Cambridge: Cambridge University Press, 1992); J. P. Mallory, *In Search of the Indo-Europeans: Language, Archaeology, and Myth* (London: Thames and Hudson, 1989); David W. Anthony, "The Archaeology of Indo-European Origins," *Journal of Indo-European Studies* 19 (1991): 193–222. On the desiccated corpses of Xinjiang province, see Victor H. Mair, "Prehistoric Caucasoid Corpses of the Tarim Basin," *Journal of Indo-European Studies* 23 (1995): 281–307, as well as the other articles in the same issue. See also two short, illustrated articles: Victor H. Mair, "Mummies of the Tarim Basin," *Archaeology* 48 (March–April 1995): 28–35; and Evan Hadingham, "The Mummies of Xinjiang," *Discover* 15 (April 1994): 68–77.
9. Victor H. Mair, "Old Sinitic 'M'ag, Old Persian Magus, and English 'Magician,'" *Early China* 15 (1990): 27–47.
10. Lionel Casson, ed., *The "Periplus Maris Erythraei"* (Princeton: Princeton University Press, 1989); Vimala Begley and Richard Daniel De Puma, eds., *Rome and India: The Ancient Sea Trade* (Madison: University of Wisconsin Press, 1991); Wang Gungwu, "The Nanhai Trade: A Study of the Early History of Chinese Trade in the South China Sea," *Journal of the Malaysian Branch of the Royal Asiatic Society* 31 (1958): 1–135; and J. Innes Miller, *The Spice Trade of the Roman Empire, 29 B.C. to A.D. 641* (Oxford: Clarendon Press, 1969).
11. Besides Bentley, *Old World Encounters*, see also Liu Xinru, *Ancient India and Ancient China: Trade and Religious Exchanges, A.D. 1–600* (New Delhi: Oxford University Press, 1988); E. Zürcher, *The Buddhist Conquest of China*, 2 vols. (Leiden: Brill, 1959–72); Arthur F. Wright, *Buddhism in Chinese History* (Stanford: Stanford University Press, 1959); Samuel N. C. Lieu, *Manichaeism in the Later Roman Empire and Medieval China*, 2nd ed. (Tübingen: Mohr, 1992); and Richard C. Foltz, *Religions of the Silk Route* (New York: St. Martin, forthcoming in 1999). Here I would like to express my appreciation to Richard Foltz for the opportunity to have an early look at his work.
12. William H. McNeill, *Plagues and Peoples* (Garden City, N.Y.: Peter Smith Publishing, 1976).
13. On cross-cultural interaction and exchanges in these eras see Bentley, "Hemispheric Integration, 500–1500 C.E.," Janet L. Abu-Lughod, *Before European Hegemony: The World System, A.D. 1250–1350* (New York: Oxford University Press, 1989); and two articles by Lynda Norene Shaffer: "Southernization," *Journal of World History* 5 (1994): 1–21; and "A Concrete Panoply of Intercultural Exchange: Asia in World History," in Ainslie T. Embree and Carol Gluck, eds., *Asia in Western and World History: A Guide for Teaching* (Armonk, N.Y.: M. E. Sharpe, 1997), 810–66.
14. Sally Hovey Wriggins, *Xuanzang: A Buddhist Pilgrim on the Silk Road* (Boulder: Westview, 1996); *Marco Polo, The Travels*, trans. by Ronald Latham (New York: Penguin, 1959); Morris Rossabi, *Voyager from Xanadu: Rabban Sauma, First Eastern Emissary to the West* (New York: Kodansha, 1992); and Ross E. Dunn, *The Adventures of Ibn Battuta: A Muslim Traveler of the Fourteenth Century* (Berkeley: University of California Press, 1986).
15. See especially Mark Elvin, *The Pattern of the Chinese Past: A Social and Economic Interpretation* (Stanford: Stanford University Press, 1973); Richard Hodges and David Whitehouse, *Mohammed, Charlemagne and the Origins of Europe: Archaeology and the Pirenne Thesis* (Ithaca: Cornell University Press, 1983); Maurice Lombard, *The Golden Age of Islam* (Amsterdam: North Holland, 1975); and two books by K. N. Chaudhuri: *Asia Before Europe*; and *Trade and Civilisation in the Indian Ocean: An Economic History from the Rise of Islam to 1750* (Cambridge: Cambridge University Press, 1985).
16. For only a few items from a vast literature, see Bentley, *Old World Encounters*; Lieu, *Manichaeism*; Foltz, *Religions of the Silk Route*; Samuel H. Moffett, *A History of Christianity in Asia*, 1 vol. to date (San Francisco: Harper, 1992); Christopher Dawson, ed., *The Mongol Mission* (New York: Harper and Row, 1966); Igor de Rachewelt, *Papal Envoys to the Great Khans* (Stanford: Stanford University Press, 1971); Liu Xinru, *Silk and Religion* (Delhi: Oxford University Press, 1996); and Jacques Gernet, *Buddhism in Chinese Society: An Economic History from the Fifth to the Tenth Centuries*, trans. by F. Verellen (New York: Columbia University Press, 1995).
17. Andrew M. Watson, *Agricultural Innovation in the Early Islamic World: The Diffusion of Crops and Farming Techniques, 700–1100* (Cambridge: Cambridge University Press, 1983).
18. McNeill, *Plagues and Peoples*; J. N. Biraben and Jacques Le Goff, "The Plague in the Early Middle Ages," in Robert Forster and Orest Ranum, eds., *Biology of Man in History* (Baltimore: The Johns Hopkins University Press, 1975), 48–80; Pauline Allen, "The 'Justinianic' Plague," *Byzantion* 49 (1979): 5–20.
19. John F. Richards, "Early Modern India and World History," *Journal of World History* 8 (1997): 197–209; Dennis O. Flynn and Arturo Giráldez, "Born with a 'Silver Spoon': The Origins of World Trade in 1571," *Journal of World History* 6 (1995): 201–22; Alfred W. Crosby, *The Columbian Exchange: Biological and Cultural Consequences of 1492* (Westport, Conn.: Greenwood, 1972); Andre Gunder Frank, *ReORIENT: Global Economy in the Asian Age* (Berkeley: University of California Press, 1998); William H. McNeill, *The Age of Gunpowder Empires, 1450–1800* (Washington, D.C.: American Historical Association, 1989).
20. Jacques Gernet, *China and the Christian Impact* (Cambridge: Cambridge University Press, 1985); George Elison, *Deus Destroyed: The Image of Christianity in Early Modern Japan* (Cambridge, Mass.: Harvard University Press, 1973); Vicente L. Rafael, *Contracting Colonialism: Translation and Christian Conversion in Tagalog Society under Early Spanish Rule* (Ithaca: Cornell University Press, 1988). On the influence of Asia in Europe see Donald F. Lach and Edwin J. Van Kley, *Asia in the Making of Europe*, 9 vols. to date (Chicago: University of Chicago Press, 1965–).
21. For only a few items from a voluminous literature, see Michael Adas, *Machines as the Measure of Men: Science, Technology, and Ideologies of Western Dominance* (Ithaca: Cornell University Press, 1988); Victor G. Kiernan, *The Lords of Human Kind: European Attitudes to the Outside World in the Imperial Age*, rev. ed. (Harmondsworth: Penguin, 1972); Bernard S. Cohn, *Colonialism and Its Forms of Knowledge: The British in India* (Princeton: Princeton University Press, 1996); Ranajit Guha and Gayatri Chakravorty Spivak, eds., *Selected Subaltern Studies* (New York: Oxford University Press, 1988); and two books by Daniel Headrick: *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century* (New York: Oxford University Press, 1981); and *The Tentacles of Progress: Technology Transfer in the Age of Imperialism, 1850–1940* (New York: Oxford University Press, 1988).