

THE ORIGIN OF THE THIRD WORLD

Mike Davis*

From:

Late Victorian Holocausts: El Niño Famines and the Origin of the Third World

What historians have so often dismissed as “climatic accidents” turn out to be not so accidental after all.¹ Although its syncopations are complex and aperiodic, El Niño/Southern Oscillation (ENSO) has a coherent spatial and temporal logic. And—contrary to Emmanuel Le Roy Ladurie’s famous (Eurocentric?) conclusion in *Times of Feast, Times of Famine* that climate change is a “slight, perhaps negligible” shaper of human affairs—ENSO is an episodically potent force in the history of tropical humanity (Ladurie, 1971:119). If, as Raymond Williams once observed, “nature contains, though often unnoticed, an extraordinary amount of human history,” we are now learning that the inverse is equally true: there is an extraordinary amount of hitherto unnoticed environmental instability in modern history (Williams, 1980:67). Indeed, the power of ENSO events seems so overwhelming in some instances that it is tempting to assert that great famines, like those of the 1870s and 1890s (or, more recently, the Sahelian disaster of the 1970s), were “caused” by El Niño, or by El Niño acting on traditional agrarian misery. This interpretation, of course, inadvertently echoes the official line of the British in Victorian India as recapitulated in every famine commission report and viceregal allocation: millions were killed by extreme weather, not imperialism. Is it true?

*Department of History, State University of New York–Stony Brook, Stony Brook, New York;
e-mail: mrdavis@notes.cc.sunysb.edu

“Bad Climate” versus “Bad System”

At this point, it would be useful to have a “natural experiment” at hand that would sort out the respective weights of what the Chinese pithily contrast as “bad climate” versus “bad system.” As Jared Diamond advocates in his recent sermon to historians, such an experiment should compare systems “differing in the presence or absence (or in the strong or weak effect) of some putative causative factor” (Diamond, 1997:424–25). An excellent candidate for which we possess unusually detailed documentation is the El Niño event of 1743–44, described as “exceptional” by Whetton and Rutherford in its impact on the north China plain.² Although not as geographically far-reaching as the great ENSO droughts of 1876–78 and 1899–1900, this event otherwise prefigured their intensities: the spring monsoon failed two years in a row, devastating winter wheat in Zhili (Hubei) and northern Shandong; scorching winds withered crops and farmers dropped dead in their fields from sunstroke; provincial grain supplies proved utterly inadequate to the scale of need. Yet, unlike the late nineteenth century, there was no mass mortality from either starvation or disease. Why not?

Pierre-Etienne Will has carefully reconstructed the fascinating history of the 1743–44 relief campaign from contemporary records. Under the skilled Confucian administration of Fang Guancheng, the agricultural and hydraulic expert who directed relief operations in Zhili, the renowned “ever-normal granaries” in each county immediately began to issue rations (without any labor test) to peasants in the officially designated disaster counties.³ (The gentry had already organized soup kitchens to ensure the survival of the poorest residents until state distributions began.) When local supplies proved insufficient, Guancheng shifted millet and rice from the great store of tribute grain at Tongcang at the terminus of the Grand Canal, then used the Canal to move vast quantities of rice from the south. These supplies maintained two million peasants for eight months, until the return of the monsoon made agriculture again possible. Ultimately, 85 percent of the relief grain was borrowed from tribute depots or granaries outside the radius of the drought. As Will emphasizes, this was famine defense in depth, the “last word in technology at the time.” No contemporary European society guaranteed subsistence as a human right to its peasantry, nor (as the Physiocrats marveled) could any emulate “the perfect timing of [Guancheng’s] operations: the action taken always kept up with developments and even anticipated them” (Will, 1990:86, 189).

Moreover, “the intervention carried out in Zhili in 1743 and 1744 was not the only one of its kind in the eighteenth century, nor even the most extensive” (Will, 1990:270). Indeed, as Table 1 shows, the Yellow River flooding of the previous year (1742/43) involved much larger expenditures over a much broader region. Although comparable figures are unavailable, Beijing also acted aggressively to aid Shandong officials in

Table 1 ENSO Disasters Relieved by Qing

Year/s	Quinn intensity	Provinces	Amount of relief
1720/21 1742/43	very strong (flooding)	Shaanxi Jiangsu/Anhui	unknown 17 million taels; 2.3 million shi
1743/44	moderate +	Zhili	.87 million taels; 1 million shi
1778	strong	Henan	1.6 million taels; .3 million shi
1779/80 1785	La Niña ?	Henan Henan	same 2.8 million taels

*Tael = silver; shi = grain. Constructed from table VII, Whetton and Rutherford, 1994:244, table VII; Will, 1990:298–99, table 20.

preventing famine during the series of El Niño droughts that afflicted that province (and much of the tropics) between 1778 and 1787 (Will and Wong, 1981:369–70). The contrast with the chaotic late-Qing relief efforts in 1877 and 1899 (or, for that matter, Mao’s monstrous mishandling of the 1959–61 drought) could not be more striking. State capacity in eighteenth-century China, as Will and his collaborators emphasize, was deeply impressive: a cadre of skilled administrators and troubleshooters, a unique national system of grain price stabilization, large crop surpluses, well-managed granaries storing more than a million bushels of grain in each of twelve provinces, and incomparable hydraulic infrastructures (Will and Wong, 1981:21).

The capstone of Golden Age food security was the invigilation of grain prices and supply trends by the emperor himself. Although ever-normal granaries were an ancient Han tradition, price monitoring was a Qing innovation. “Great care was exercised by the eighteenth-century Emperors in looking over the memorials and price lists in search of inconsistencies” (Wilkinson, 1970:122–29). On the fifth of every month *hsien* magistrates forwarded detailed price reports to the prefectures, who summarized them for the provincial governors; the governors, in turn, reported their content in memorials to the central government. “In the 1720s and 1730s,” R.B. Wong writes, “the Yongzheng emperor personally scrutinized granary operations, as he did all other bureaucratic behavior; his intense interest in official efforts and his readiness to berate officials for what he considered failures partially explain the development of granary operations beyond the levels achieved in the late Kangxi period” (Wong, 1982: 76). The Yongzheng emperor also severely sanctioned speculation by the “rich households [who] in their quest for profit habitually remove grain by the full thousand or full myriad bushels” (Dunstan, 1996:251). His successor, the Qianlong emperor, ordered the prefects to send the county-level price reports directly to the Bureau of Revenue in Beijing so he could study

them firsthand. The emperors' intense personal involvement ensured a high standard of accuracy in price reporting and, as Endymion Wilkinson demonstrates, frequently led to significant reform (Wilkinson, 1970: 122–29).⁴ This was another *differentia specifica* of Qing absolutism. It is hard to imagine a Louis XVI spending his evenings scrupulously pouring over the minutiae of grain prices from Limoges or the Auvergne, although the effort might have ultimately saved his head from the guillotine.

Moreover, in contrast to later Western stereotypes of a passive Chinese state, government during the high Qing era was proactively committed to famine prevention through a broad program of investment in agricultural improvement, irrigation, and waterborne transportation. Confucian activists like Guancheng, with a deep commitment to agricultural intensification, “tended to give top priority to investments in infrastructure and to consider the organization of food relief merely a makeshift” (Will, 1990: 257). Guancheng also wrote a famous manual (the source of much of Will’s account) that codified the principles of disaster planning and relief management, something else that has little precedent in backward European tradition.

Finally, there is plentiful evidence that the northern China peasantry during the high Qing was more nutritionally self-reliant and less vulnerable to climate stress than the same population a century later. In the eighteenth century, after the Kangxi emperor permanently froze land revenue at the 1712 level, China experienced “the mildest agrarian taxation it had ever known in the whole of its history” (Gernet, 1996:468). Likewise, the exchange ratio between silver and copper coinage, which turned so disastrously against the poor peasantry in the nineteenth century, was stabilized by the booming output of the Yunnan mines (replacing Japanese copper imports) and the great inflow of Mexican bullion earned by China’s huge trade surplus (Wilkinson, 1970:31). Unlike their contemporary French counterparts, the farmers of the Yellow River Plain (the vast majority of whom owned their land) were neither crushed by exorbitant taxes nor ground down by feudal rents. As a result, northern China was unprecedentedly prosperous by historical standards, and Will estimates that less than 2 percent of the rural population ordinarily lived near the edge of starvation—depending, for example, on husks and wild vegetables for a substantial part of their diet (Will, 1990:32).

Still, could even Fang Guancheng have coped with drought disasters on the scale of those engulfing the larger part of North China in 1876 or even 1899? It is important to weigh this question carefully, since drought-famines were more localized in the eighteenth century, and because the 1876 drought that killed 13 million people may have been a 200-year or even 500-year frequency event. Moreover, the late Victorian droughts reached particular intensity in the loess highlands of Shanxi and Shaanxi, where transport costs were highest and bottlenecks almost unavoidable.

It is reasonable, therefore, to concede that a drought of 1876-like magnitude in 1743 would inevitably have involved tens of thousands, perhaps even hundreds of thousands, of deaths in more remote prefectures and counties. However, such a drought would have been unlikely to grow into a true holocaust that consumed the populations of whole provinces, as happened in the late nineteenth century. In contrast to the situation in 1876–77, when granaries were depleted and prices soared out of control, eighteenth-century administrators could count on a large imperial budget surplus and well-stocked local granaries backed up by a huge surplus of rice in the south. Large stockpiles of tribute grain at strategic transportation nodes in Henan and along the Shanxi-Shaanxi border were specially designated for the relief of the loess provinces, and an abundance of water sources guaranteed the Grand Canal's navigability year-round.⁵ Whereas in 1876 the enfeebled and demoralized Chinese state was reduced to desultory cash relief augmented by private charity, in the European Age of the Enlightenment it had both the technology and political will to shift grain massively between regions and, thus, relieve hunger on a larger scale than any previous polity in world history.⁶

“Laws of Leather” versus “Laws of Iron”

What about pre-British famines in India? Again, there is little evidence that rural India ever experienced pre-colonial subsistence crises on the scale of the Bengal catastrophe of 1770 under East India Company rule or the long ordeal by disease and hunger under the Raj between 1875 and 1920. To be sure, the Mughals did not dispose of anything like the resources of the centralized Qing state at its eighteenth-century zenith, nor is their administrative history as well documented. As Sharma has pointed out, “the problems of intervening in the complex network of caste-based local markets and transport bottlenecks rendered an effective state intervention quite difficult” (Sharma, 1993:359). On the other hand, benefiting perhaps from the milder ENSO cycle of the late seventeenth and early eighteenth centuries, most of the drought-famines under Mughal rule tended to be smaller in scale, as well as less frequent, than those of the nineteenth century. There is considerable evidence that in pre-British India, before the creation of a railroad-girded national market in grain, village-level food reserves were larger, patrimonial welfare more widespread, and grain prices in surplus areas better insulated against speculation (Bhatta, 1963:9). The perverse consequence of a unitary market was to export famine, via price inflation, to the rural poor in otherwise grain-surplus districts.

Moreover, the Mughal state “regarded the protection of the peasant as an essential obligation,” and there are numerous examples of humane if sporadic relief operations (Singh, 1996:22). Like their Chinese contemporaries, the Mughal rulers Akbar, Shahjahan, and Aurangzeb relied

on a quartet of fundamental policies—embargoes on food exports, anti-speculative price regulation, tax relief, and distribution of free food without a forced labor counterpart—that were anathema to later British utilitarians (Kondker, 1986:27).⁷ They also zealously policed the grain trade in the public interest. As one horrified British writer discovered, these “oriental despots” punished traders who shortchanged peasants during famines by amputating an equivalent weight of merchant flesh (Blair, 8–10).

The British did occasionally pay revealing tribute to the policies of their predecessors. For example, the first Famine Commission Report, in 1880, cited Aurangzeb’s extraordinary relief campaign during the (El Niño?) drought-famine of 1661:

The Emperor opened his treasury and granted money without stint. He gave every encouragement to the importation of corn and either sold it at reduced prices, or distributed it gratuitously amongst those who were too poor to pay. He also promptly acknowledged the necessity of remitting the rents of the cultivators and relieved them for the time being of other taxes. The vernacular chronicles of the period attribute the salvation of millions of lives and the preservation of many provinces to his strenuous exertions (Ackroyd, 1974:51).

Food security was also probably better in the Deccan during the period of Maratha rule. As Mountstuart Elphinstone admitted retrospectively after the British conquest, “the Mahratta country flourished, and the people seem to have been exempt from some of the evils which exist under our more perfect Government” (quoted in Bagchi, 1992:11). Unlike the British-imposed *raiyatwari* system, occupancy rights in the Maratha Deccan were not tied to revenue payment, taxes varied according to actual harvest, the poor had access to common lands and resources, and the rulers subsidized local irrigation improvement with cheap *taqavi* (or *tagai*) loans. In contrast to the rigidity and dogmatism of British land-and-revenue settlements, both the Mughals and Marathas flexibly tailored their rule to take account of the crucial ecological relationships and unpredictable climate fluctuations of the subcontinent’s drought-prone regions. The Mughals had “laws of leather,” wrote journalist Vaughan Nash during the famine of 1899, in contrast to the British “laws of iron” (Nash, 1900:92). Although the British insisted that they had rescued India from “timeless hunger,” more than one district official was jolted when Indian nationalists quoted from a 1878 study published in the prestigious *Journal of the Statistical Society* that contrasted 31 serious famines in 120 years of British rule against only 17 recorded famines in the entire previous two millennia (Walford, 1878: 434–42).

In other words, India and China did not enter modern history as the helpless “lands of famine” so universally depicted in the Western imagination. Certainly, as we have seen, the intensity of the ENSO cycle in the late nineteenth-century—perhaps equaled on only three or four other occasions in the last millennium—must loom large in any explanation of the catastrophes of the 1870s and 1890s. However, it is scarcely the only independent variable. Equal or more causal weight must be accorded to the increased social vulnerability to drought and natural disaster that became so evident in South Asia, north China, northeast Brazil and southern Africa in late Victorian times. What, then, was the source of this new vulnerability?

The Late Victorian World Economy

Over the last generation, scholars have produced a bumper crop of high quality social and economic histories of the regions teleconnected to ENSO’s episodic disturbances. This research has further demolished orientalist stereotypes of immutable poverty and overpopulation as the natural preconditions of the major nineteenth-century famines. There is persuasive evidence that peasant society became dramatically more pregnable to natural disaster after 1850 as local economies were violently incorporated into the world market. What colonial administrators and missionaries—even sometimes Creole elites, as in Brazil—perceived as the persistence of ancient cycles of backwardness were typically modern structures of formal or informal imperialism. With few exceptions, the forcible incorporation of peasant production into commodity and financial circuits ultimately controlled from the metropolis radically exacerbated the instability of subsistence agriculture. Nineteenth-century peasant producers in India and China—and, to a lesser extent, in Brazil and southern Africa—existed increasingly *in* the late Victorian world market but not *of* it. It accumulated their labor directly (as product) or indirectly (as revenue), but they could seldom accumulate (as surplus) through it. At best, their structural position in the international economic hierarchy equated with stagnation; most evidence, from northern China as well as India, suggests falling household wealth and increased fragmentation or alienation of land. Whether farmers were directly employed by the world market (like the Berari *khatedars* and Cearan *parceiros* who fed the mills of Lancashire during the Cotton Famine) or simply producing for domestic markets subject to international competition (like the cotton-spinning peasants of the Boxer hsiens in western Shandong), commercialization went hand in hand with pauperization.

At the same time, Victorian imperialism impeded state-level developmental responses that might have reduced vulnerability to drought-famine. In the case of India, official neglect of local irrigation and the

brutal enclosure of forest and pasture resources largely cancelled any grassroots benefit from British railroad and canal-building programs. In China, an interaction of endogenous stresses and the loss of sovereignty over foreign trade in the aftermath of the Opium wars undermined the famous state commitments to the "normalization" of grain prices and the ecological stabilization of agriculture in the Yellow River plain. Foreign (largely British) domination over Brazil's financial and fiscal flows likewise helps explain the failure of both the Empire and its successor republic to launch any anti-drought developmental effort in the *sertao*. The inability to regulate local relationships with world market hegemony at the very time when mass subsistence increasingly depended upon food entitlements acquired in that market provided a sinister syllogism for famine. Indeed, what we call the "Third World" (a Cold War term) is the outgrowth of income and ecological differentials—the famous "development gap"—that were shaped most decisively in the last quarter of the nineteenth century (Sauvy, 1952:5).

Before considering regionally specific case studies of rural immiseration and emergent "underdevelopment," including Brazil, it is necessary to briefly describe how the positions of the great Indian and Chinese peasantries in the world economy changed over the course of the nineteenth century. As a baseline for understanding the origins of modern global inequality, the Herculean statistical labors of Paul Bairoch and Angus Maddison have been complemented by recent comparative studies of European and Asian standards of living. Bairoch's famous claim, corroborated by Maddison, asserts that differences in income between the great civilizations of the eighteenth century were relatively slight. Indeed, "it is very likely that, in the middle of the eighteenth century, the average standard of living in Europe was a little bit lower than that of the rest of the world" (Bairoch, 1982:107). When the *sans-culottes* stormed the Bastille, the largest manufacturing districts in the world were still the Yangze delta and Bengal (Bairoch, 1982: 107).

In the mid-eighteenth century India alone produced one quarter of world manufactures, and, as Parthasarathi has recently shown, the stereotype of the Indian laborer as a half-starved wretch in a loincloth collapses in the face of new data about comparative standards of living. "Indeed, there is compelling evidence that South Indian laborers had higher earnings than their British counterparts in the eighteenth century and lived lives of greater financial security" (82). Because South Indian land productivity was higher than that in Europe, weavers and other artisans enjoyed better diets than average Europeans. More importantly, their unemployment rates tended to be lower because they possessed superior rights of contract and exercised more economic power. Even outcaste agricultural laborers in Madras earned more in real terms than English farm laborers (Parthasarathi, 1998: 82–87, 105–106). (By 1900, in contrast, Romesh Dutt

estimated that the average British household income was 21 times higher than its Indian counterpart) (Dutt, cited in Eddy 1911:21).

New research by Chinese historians also challenges traditional conceptions of relative economic growth. Referring to the pathbreaking work (in Chinese) of Li Bozhong, Philip Huang notes that “the outstanding representative of this new academic tendency has even argued the overall economic development of the Yangzi delta in the Qing exceeded that of ‘early modern’ England” (Huang 1990:4). Kenneth Pomeranz seemingly supports this judgment when he writes in a recent forum on “Rethinking 18th Century China”:

Chinese life expectancy (and thus nutrition) was at roughly English levels (and so above continental ones) even in the late 1700s. (Chinese fertility was actually lower than Europe’s between 1550 and 1850, while its population grew faster; thus mortality must have been low.) Moreover, my estimates of “non-essential” consumption come out surprisingly high. Sugar consumption works out to between 4.3 and 5.0 pounds per capita ca. 1750—and much higher in some regions—compared with barely 2 pounds per capita for Europe. China circa 1750 seems to have produced 6–8 lbs. of cotton cloth per capita; its richest area, the Yangzi Delta (population roughly 31 million) probably produced between 12 and 15 lbs. per capita. The UK, even in 1800, produced roughly 13 lbs. of cotton, linen and wool cloth combined per resident, and Continental output was probably below China’s (Pomeranz, 1997).

Likewise, as Maddison demonstrates in Table 2, the Chinese GDP grew faster in absolute terms than that of Europe throughout the eighteenth century, dramatically enlarging its share of world income by the 1820s.

The usual stereotype of nineteenth-century economic history holds that Asia stood still while the Industrial Revolution propelled Britain, followed by the United States and eventually the rest of Western Europe, down the path of high-speed GNP growth. In a superficial sense, of course, this is true, although the data gathered by Bairoch and Maddison show that Asia lost its preeminence in the world economy later than most of us imagine. The future Third World (dominated by India and China) surrendered ground very grudgingly until 1830–40, when it still generated nearly 70 percent of the global GNP. It then declined with increasing rapidity through the rest of the nineteenth century, generating only 38 percent of the world GNP in 1900. The deindustrialization of Asia, via the substitute of British cloth imports for locally manufactured textiles, reached its climax only in the two decades after the construction of the Crystal Palace. (Britain exported 51 million yards of cloth to Asia in 1831, 995 million in 1871, 1413 million in 1879 and 2000 million in 1887.) (Bairoch, 1978:565).⁸

Table 2 Shares of World GDP¹

	1700	1820	1890	1952
China	23.1	32.4	13.2	5.2
India	22.6	15.7	11.0	3.8
Europe	23.3	26.6	40.3	29.7

¹Angus Maddison, *Chinese Economic Performance in the Long Run*, Paris 1998, p. 40. See also his *Monitoring the World Economy, 1820–1992*, Washington, D.C. 1995.

Why did Asia stand in place? The rote answer holds that it was weighted down with the chains of tradition and Malthusian demography, although this did not prevent Qing China from experiencing extraordinary economic growth during the eighteenth century. Moreover, as Marx likes to point out, the Whig view of history deletes a great deal of very bloody business. The relevant question is not so much why the industrial revolution occurred first in Europe, but why other advanced regions of the eighteenth-century world economy failed to adapt their handicraft manufactures to the new conditions of production and competition in the nineteenth century. Here the role of force and the loss of economic sovereignty comprise the central variables. The famous textile industries of India and China were not so much defeated by market competition as forcibly dismantled by war, invasion, opium, and a Lancashire-imposed system of one-way tariffs. Whatever the internal brakes on rapid economic growth in Asia, Latin America, or Africa, it is indisputable that from about 1780 or 1800 onward, every serious attempt by a non-Western society to move over into a fast lane of development or to regulate its terms of trade met a military as well as an economic response from London or a competing imperial capital. (Japan is the exception that proves the rule.) The use of force to configure the world economy is, after all, what Pax Britannica was really about.

This is not to claim that the Industrial Revolution necessarily depended on the colonial conquest or economic subjugation of Asia. On the contrary, the Atlantic slave trade and the plantations of the New World provided much more important streams of liquid capital at strategic moments in boosting the industrial take-off in Britain and the United States. (Only the Netherlands depended crucially upon Asian tribute—the profits of the *Cultursystem*—in financing its economic recovery and incipient industrialization in the 1820–70 period.) Paradoxically, monsoon Asia's most important "moment" in the Victorian world economy occurred not at the beginning of the epoch, but toward its end. The coerced levies of wealth from India and China were not essential to the rise of British hegemony, but they performed an absolutely crucial role in postponing its decline.

During the protracted period of stop-and-go growth from 1873 to 1896 (what economic historians used to call the “Great Depression,” now more accurately known as the “Long Depression”) the rate of capital formation and the growth of productivity (of both labor and capital) in Britain began a dramatic slow-down.⁹ Since British imports and overseas investments dynamized local growth from California to Denmark, the potential “scissors” between UK productivity and consumption threatened the entire structure of world trade. It was at this juncture that the starving Indian and Chinese peasantries were wheeled in as unlikely saviors. For a generation they braced the entire system of international settlements, allowing England’s continued financial supremacy to temporarily coexist with its relative industrial decline. As Giovanni Arrighi emphasizes, “the large surplus in the Indian balance of payments became the pivot of the enlarged reproduction of Britain’s world-scale processes of capital accumulation of the City’s mastery of world finance” (Arrighi, 1994:263).

This crucial circuit operated simply and ingeniously. Britain earned huge annual surpluses in her transactions with India and China that allowed her to sustain equally large deficits with the United States, Germany and the white Dominions. True, Britain also enjoyed invisible earnings from shipping, insurance, banking, and foreign investment. However, without Asia, Anthony Latham argues, Britain “presumably would have been forced to abandon free trade” (Latham, 1978:70), while her trading partners would have been forced to slow down their rates of industrialization. The liberal world economy might otherwise have fragmented into autarkic trading blocs, as it did later during the 1930s.

The United States and industrial Europe, in particular Germany, were able to continue their policy of tariff protection only because of Britain’s surplus with Asia. Without that Asian surplus, Britain would no longer have been able to subsidize their growth. So what emerges is that Asia in general, but India and China in particular, far from being peripheral to the evolution of the international economy at this time, was in fact crucial. Without the surpluses that Britain was able to earn there, the

Table 3 UK Balance of Payments (1910) (in millions of pounds)

Debit	Credit
USA 50	India 60
Europe 45	China 13
Canada 25	Japan 13
Other 25	Other 32

Saul, B. (1960). *Studies in British Overseas Trade 1870–1914*, Liverpool, p. 58.

whole pattern of international economic development would have been severely constrained. (Latham, 1978:70)¹⁰

How, in an age of famine, was Asia able to pay for this drain of wealth to Britain?¹¹ In the case of India, the opening of the Suez Canal and the growth of steam shipping drastically reduced the transport costs of bulk commodity export from the subcontinent. As a result, in addition to opium, millions of acres of subsistence agriculture were supplanted by export monocultures of indigo, cotton, wheat, and rice. Part of this production was designed to assure low grain prices in the metropolis after the debacle of English agriculture in the 1870s. Between 1875–1900—a period that included the worst famines in Indian history—annual grain exports increased from 3 to 10 million tons; as Dutt pointed out, this quantity equaled the annual nutrition of 25 million people (Rothermund, 1988:36; Dutt 1904:48). Indeed, by the turn of the century, India was supplying nearly a fifth of Britain's wheat consumption at the cost of its own food security.

From the East India Company's first illegal shipment of opium to Canton, Indian agriculture made an even more important contribution to the imperial system: the income it earned in the Eastern Hemisphere. Especially in the 1880s and 1890s, the subcontinent's permanent trade and current account imbalances with Britain were financed by its trade surpluses of opium, rice, and cotton thread vis-à-vis the rest of Asia. Indeed, England's systematic exploitation of India depended in large part on India's commercial exploitation of China.¹² This triangular trade between India, China, and Britain had a strategic economic importance in the Victorian world system that transcended other, even larger flows of commerce. From the beginning of the nineteenth century, the East India Company relied on opium exports from Bengal to Canton (which in 1832 earned a net profit "at least fourteen times the prime cost") to finance the growing deficits generated by its expensive military operations on the subcontinent. By forcibly enlarging the Chinese demand for the narcotic and, thus, the taxes collected on this export, the two Opium Wars revolutionized the revenue base of British India. "Opium," says John Wong, "serviced the cost of imperial expansion in India" (Wong, 1998:390, 396). It also subsidized the imports of US cotton that fueled the industrial revolution in Lancashire.

. . . [T]he sale of Bengal opium to China was a great link in the chain of commerce with which Britain had surrounded the world. The chain worked like this. The United Kingdom paid the United States for cotton by bills upon England; the Americans took some of those bills to Canton and swapped them for tea. The Chinese exchanged the bills for Indian opium. Some of the bills were remitted to England as profit; others were taken

to India to buy additional commodities, as well as to furnish the money remittance of private fortunes in India and the funds for carrying on the Indian government at home (Wong, 1998:409–10).

When, after 1880, the Chinese unofficially resorted to domestic cultivation of opium (an early example of “import-substitution”) to reduce their trade deficit, British India found in the export of factory-spun cotton yarn a lucrative new advantage which had a devastating impact on Chinese folk textiles. Moreover, in the later nineteenth century Britain herself started earning a substantial surplus in the China trade for the first time. (The Second Opium War, or “Arrow War”—which increased British exports to China tenfold in a single decade—again proved the turning point [Wong, 1998:453–54].) Britain’s dominant role in Chinese foreign trade, built by Victorian *narcotraffickers* with gunboats, thus leveraged the whole free-trade imperium. “China,” summarized Latham, “directly through Britain and indirectly through India, enabled Britain to sustain her deficits with the United States and Europe on which those countries depended for export stimulus and, in the case of the United States, capital inflow to some degree” (Latham, 1978:81–90).

With China’s loss of control over her own tariff, the country’s trade deficit became intractable by 1884. “[N]ot a single year [in the rest of the nineteenth century] showed a surplus; the average annual deficit rose to 26.6 million taels—roughly about 10 percent of the yearly total trade” (Ch’en, 1980:116). Among China’s traditional monopolies, Indian production undercut tea in the world market, while Japanese silk competed with the famous silk brands of southern China. Unlike India, China was unable to finance any of its consistent and growing overall deficit via trade surpluses with a third party, nor could it siphon compensatory incomes from its overseas colonies, as Britain could. As a result, the Qing became increasingly dependent on foreign exchange remittances from Chinese emigrants to southeast Asia, Oceania, and North America. Although the government publicly expressed its disgust with the coolie trade, it had little alternative but to collaborate in its expansion. The so-called “yellow peril” that English writers would help to popularize was thus a direct consequence of Asia’s increasing subsidization of faltering British hegemony. Emigrant Chinese plantation workers and railroad laborers, like Indian *ryots*, balanced England’s accounts on their bent backs.

In addition to being at the losing end of the imperialism of free trade, the Indian and Chinese economies also found themselves throttled by military expenditures and the gold standard. In the Victorian era, no other major countries were forced to devote such excessive portions of their national income to war. Already saddled with a huge public debt that included reimbursing the stockholders of the East India Company and paying the costs of the 1857 revolt, India also had to finance British

military supremacy in Asia. In addition to incessant proxy warfare with Russia on the Afghan frontier, the subcontinent's masses also subsidized such far-flung adventures of the Indian Army as the occupation of Egypt, the invasion of Ethiopia, and the conquest of the Sudan. As a result, military expenditures never comprised less than 25 percent (34 percent including police) of India's annual budget, and viceroys were constantly searching for creative ways to purloin monies for the Army from other sections of the budget, even the Famine Fund.

The Chinese case, of course, was even more extreme. From 1850 to 1873 China was aflame with social and ethnic conflict on a scale that utterly dwarfed the contemporary War Between the States. As most historians have recognized, this carnage found its roots in the structural recession and increasing insecurity of existence that followed the First Opium War. In turn, the fiscal effects of epic warfare proved enormous. For example, the Taiping revolutionaries cut off Beijing from the revenues of more than a dozen southern provinces. A lesser-known Moslem revolt in Gansu and Shaanxi in the 1860s–70s, which grew into a nightmarish war of ethnic extermination, also took millions of lives and absorbed vast state resources. Together with the 1870s Nien rebellion in the north, costly military expeditions to Central Asia, and formal wars with Britain, France, and, later, Japan, some years 75 percent of the imperial budget was expended in field armies (without, however, leading to real military modernization) (Bohr, 1974:24). As Pomeranz has shown, the staggering costs of their survival forced the Qing to “triage” state expenditure between regions. They ultimately chose to favor the coastal cities, where customs revenues were soaring but sovereignty was most under threat, over the vast subsistence economy of inland north China. Their abandonment of imperial mandates for flood control and canal navigation, traditionally so essential to the ecological security of the Yellow River plain, had predictably catastrophic consequences when the ENSO cycle intensified in the later nineteenth century (Pomeranz, 1993:273–73).

The two great nations of Asia were also victimized by the new international monetary system established in the 1870s. Although Britain adopted the gold standard in 1821, the rest of the world clung to either a silver standard or a bimetallic system. Supply and demand for both metals remained relatively stable, with only minor fluctuations in their exchange ratio. However, after defeating France in 1871, Germany shifted to gold, soon followed by the United States, the rest of Europe, and eventually Japan. Vast quantities of demonetized silver flooded the world market, depreciating the currency of India and China, the major nations outside the hegemonic gold bloc. The London-based Chartered Bank of India, Australia, and China, which financed much of the Indian trade, had the same kind of quasi-state influence over Indian monetary policy as the Manchester Chamber of Commerce enjoyed over Indian agriculture. Keeping the rupee tied to silver had obvious

advantages for Britain, since the value of its exports (denominated in gold) to India increased in value while its imports (denominated in silver) declined in value. Moreover, India's "home charges"—the annual payments to London for pensions, border wars, public debt, the Secretary of State's office, and so on—were fixed in gold, and John McGuire cites evidence that the devaluation of silver alone cost India 105 million pounds between 1874 and 1894 (McGuire, 1988:51). In terms most vital to a famine-threatened peasantry that banked savings in women's jewelry, it is estimated that the gold standard stole one quarter of the purchasing power of India's silver ornaments (Nash, 1900:88).

In China's case, rampant silver depreciation directly resulted from the chronic trade deficit that Britain engineered with opium imports from India. "Within a generation, the tael had lost nearly two-thirds of its exchange value" (Ch'en, 1980:120). Some mercantile elites may have benefited from the advantage that cheaper international prices gave their exports, particularly tea and Shanghai cotton goods. However, "imports from gold-standard countries became more expensive, which was particularly serious for railway development. Foreign investment in China was also discouraged, for fear of repayment in a depreciated standard" (Ap, 48). The impact on the north Chinese peasantry, as upon their Indian cousins, was especially deleterious. Since trade deficits in India and China were financed by the outflow or "dehoarding" of silver, silver's internal value rose vis-à-vis the copper coinage that circulated in village economies. As a result, copper depreciated faster than silver, which still denominated tax assessments. The impact of cash depreciation occurred most acutely in the Yellow River region, where an estimated 99 percent of exchanges were in copper (versus 30 percent in the Yangtze delta). Moreover, Northern peasants were often forced to convert their copper at a much higher exchange rate than the gentry, an issue that fueled much local protest in the late nineteenth-century as well as contributing to the agrarian explosion of the Boxer Rebellion (Wilkinson, 1990:34, 41–43, 52).

Forcibly imposed trade deficits, chronic imperial and civil warfare, a gold standard that picked the pockets of Asian peasants—these were the key modalities through which the burden of "structural adjustment" in the late Victorian world economy shifted from Europe and North America to agriculturalists in newly created "peripheries" like the Indian Deccan, northern China, and the Brazilian Nordeste. Before examining in more detail the political economy of famine in China and Brazil, however, it is important to clarify why, in the case of colonial Indian export, agriculture failed dramatically to dynamize indigenous agrarian capitalism. Here, if anywhere in rural Asia, integration into the world market should have resulted in significant local increases in agricultural productivity and profitability. Apart from the plantation crops of tea and indigo, most export production—opium, wheat, rice, and cotton—remained in native hands under a regime of "modern" property rights. Although British

commissions and surveys were constantly discovering the tender shoots of capitalism in village economies, peasant prosperity was almost always ephemeral and quickly reabsorbed into the huge inertia of rural poverty. Only moneylenders, urban merchants, and a handful of indigenous industrialists seemed to have benefited consistently from India's renewed importance in world trade. Why this should be so is revealed by recent research on Berar, Bihar, and the Punjab, three dynamos of India's late-Victorian export economy.

India: The Poverty of Modernization

If the history of British rule in India were to be condensed into a single fact, it is this: there was no increase in India's per capita income from 1757 to 1947 (Maddison, 1998:67). There was no economic development in the usual sense of the term. "Static overall yield figures," Tomlinson writes, "do not mean that output everywhere was stagnant, but rather that progressive forces were always cancelled out by regressive ones, and that periods of dynamism were interspersed with periods of enervation" (Tomlinson, 1993:31). Moreover, in the age of Kipling—that "glorious imperial half century" from 1872 to 1921—the life expectancy of ordinary Indians fell by a staggering 20 percent, a deterioration in human biology probably without precedent in the subcontinent's long history (Davis, 1951:8). Poverty in India, of course, is usually conceived as the absence of modernization. But, as Laxman Satya has shown in his important case study of Victorian Berar (a state devastated by the 1897 and 1899 famines), radical immiseration could go hand in hand with agricultural commercialization and infrastructural modernization.

Prised away from Hyderabad in 1853, the Marathi province of Berar, together with the adjoining district of Nagpore, had been selected by the Cotton Supply Association—an arm of the Manchester Chamber of Commerce—as prime locations for specialized cotton monoculture (Satya, 1994:50, 155). The Association wielded extraordinary power over the reshaping of the Indian economy in the wake of the Mutiny and the imposition of direct rule. Indeed, to ordinary Indians trying to decipher codes of power within the Raj, it sometimes seemed as if their real sovereigns ruled from Manchester's Guildhall rather than Buckingham Palace. "The most blatant example of such imperial favoritism," Stanley Wolpert points out, "occurred in 1879, when Viceroy Lytton actually overruled his entire council to accommodate Lancashire's lobby (the Association) by removing all import duties on British-made cotton, despite India's desperate need for more revenue in a year of widespread famine and tragic loss of life throughout Maharashtra" (Wolpert, 1989:248).

In the case of Berar, the Association encouraged the administrative dismantling of the *balutedari* system through which dominant local clans

or castes had exercised managerial control over a complex system of social production including communal irrigation and cotton weaving. In the essence of the old order, the upper castes had claims on agricultural produce but did not own the land itself. After purging the “disloyal” leading families, the British spent seventeen years (1861–77) reorganizing the vast peasant universe of Berar (7000 villages and 10.5 million acres of cultivable land) into the alternative *khatedari* system. A variant of the *ryotwari* model that had been imposed on most of southern and western India, it was heralded as establishing the *khatedars* as sturdy Berari versions of the English yeomanry. In reality the government became the supreme landlord, with peasant tenure—unlike that in Tudor England—strictly conditional upon punctual payment of revenue. The complicated reciprocities of the *balutedari* system gave way to brutal and unilateral relations of exploitation. “Diversity and mobility,” which Satya points out were “the characteristic feature[s] of precolonial Berar,” were replaced by coercive “standardization and sedentarization.” The actual collection of taxes as well as the local marketing of the cotton crop ended up in the hands of moneylenders/grain merchants who became the crucial intermediaries controlling almost all transactions between the village world, Calcutta, and Manchester. Meanwhile, punitive taxes on local woven goods and a flood of cheap English imports in the wake of the arrival of the Great India Peninsular Railway destroyed domestic manufacture and forced ruined artisans into the fields as propertyless laborers. The railroad inflicted the same fate on the *banjaras*, the colorful and ethnically diverse stratum of traditional porters and carters (Satya, 1994: 21–27, 36–37, 50–51, 72, 155, 162, 188–90, 333).

From a British perspective, the reengineering of Berari society was a stunning success. By 1867 Berar alone was sending as much cotton to Manchester as was all of Egypt. However, the *khatedars* and their tenants had no way to participate in the profits of the boom. Precisely as the Cotton Supply Association had intended, Bararis were captive to Lancashire’s demand-side monopsony. As one agent of the Association explained in 1869, “speaking generally, the cultivator who produced and sells the cotton cannot in any way regulate the market price. For this he is dependent on the home market and many causes which combine to raise and lower the price in Liverpool” (Satya, 1994:182). Berari cotton exports had been nurtured in the first place during the 1850s to buffer fluctuations in the premium American cotton supply and ensure price stability for Lancashire mills. “In short,” Charlesworth explains, “British industry wanted Indian raw cotton as a sort of permanent twelfth man, always ready in the pavilion but only occasionally brought on to the field of play. This role hardly produced the consistency of demand necessary to promote a more extensive commercial agriculture” (Charlesworth, 1985:81).

In other words, the khatedars served as a contingent work force for the Association, which had no intention of ever allowing them to wield any autonomous bargaining power within the international cotton market. Instead, they rapidly became entrapped in spiraling debt fueled by high taxes. Without succumbing to “cotton determinism,” there are some striking similarities between Berar and the debt peonage system that reorganized cotton production in the American South after Reconstruction. Khatedars possessing more resources attempted to escape from the debt trap by becoming microexploiters themselves, and by the 1870s holdings were being fragmented into smaller parcels and worked by subtenants known as *bhagindars*. Satya estimates that the *bhagindars* paid rack-rents three or fourfold greater than revenue demands imposed on the khatedars. By the great droughts of the 1890s, the stratum of authentically independent cultivators had been reduced to a minority, and at least 70 percent of the population were either impoverished *bhagindars* or landless laborers whose fates hung on the dance of cotton prices in far-away exchanges (Satya, 1994:68, 298).

This layering of exploitation had a devastating impact on overall welfare in Berar. A society formerly celebrated for its rich cotton fabrics became virtually unclothed by poverty as per capita textile consumption plummeted in inverse relationship to soaring exports of raw cotton. “Most Berari children went naked, most Berari men were half clad, and a majority of the Berari women clothed themselves in rags” (Satya 1994:200). Although huge sums of capital were sunk into the export infrastructure—including railroad spurs, cotton yards, and metalled feeder roads—none of it percolated to the village level, where degraded sanitary conditions, especially the contamination of drinking water by human waste, spread cholera and gastrointestinal disease as well as tuberculosis. Similarly, local food security was eroded by the advance not only of cotton production (which doubled its acreage in the last quarter of the century)

Table 4 Lancashire’s Consumption of Cotton, 1866–67

	<i>Bales</i>
N. America	1.5 mil
India	1.7 mil
Brazil	.5 mil
(Berar)	.25 mil
Egypt	.25 mil
Rest	.35 mil
Total	4.1 mil

Satya, L. (1994). “Cotton and Famine in Berar, 1850–1900.” Ph.D. dissertation, Tufts University, p. 180.

but of grain exports as well. During the famine of 1899–1900, when 143,000 Beraris died directly from starvation, the province exported not only thousands of bales of cotton but an incredible 747,000 bushels of grain (Satya 1994:148, 281–2, 296). Despite heavy labor immigration into Berari in the 1890s, the population fell by five percent and “life expectation at birth” twice dipped into the 15-years range before finally falling to less than ten years during the “*extremely bad year*” of 1900 (Dyson, 1989:181–82).

. . . [T]he entire shift of cotton production from large to small farms can be seen as a mechanism whereby, through the application of usury and “service” capital, magnate-creditors sought to respond to the conditions of depression in the cotton market and to continue to squeeze a healthy profit out of the crop. By acting as its major financiers and advancing it the factors of production that it lacked, magnant farmers were able to draw returns from small farming’s one supposed advantage—unpaid family labor. The family now laboured longer and harder and passed most of the profits of its work to the magnates in interest payments and rents. Not only did the new economic system “rationalize” the deployment of labor, most critically it cheapened it—in this case, literally, to the price of nothing.

To be sure, the direct producers fared little better in any of the other sectors of Indian commercial agriculture. In Biah, for example, starvation followed quickly on the heels of the indigo boom. “The planters were hated throughout eastern India because of their racial arrogance and their contempt for the law. They maintained small private armies of strong men whom they would use to coerce the peasantry, forcing them to grow indigo” (Hardiman 1992:13–14). As early as 1866, peasants in the drought-stricken rice lands organized a common front against the indigo planters whom they blamed for displacing subsistence agriculture. In short, the paddy and bhiti land in which the ryots had a right of cultivation have been converted into indigo lands. Thus there has been less grain producing land, a decrease in the quantity of gain has been the result which for the last few years has caused scarcity and famine in a bad year. “This also explains,” Colin Fisher points out, “why the most spectacular indigo agitations occurred in rice growing lowlands like Bettiah, Sitamurhi, and Madhuban, areas which were peculiarly liable to famine” (Fisher 1978: 125–31).

Similarly, the late nineteenth-century wheat frontier in the Punjab is often cited as the great success story of indigenous agriculture under the British. If some of the big landlords in the canal colonies did in fact enrich themselves from the export boom, they typically plowed their capital into usury and grain trading (becoming *shahukars*), rather than investing it in

agricultural improvement. For the majority of *zamindars*, meanwhile, “the commercialization of agriculture merely increased their indebtedness and consequent poverty.”

They were generally indebted to the shahukars who compelled them to throw their produce at a low market price and thus acted as compulsory middlemen. In many cases, the shahukars financed the cultivation of these crops and carried them away from the zamindars’ threshing floors as soon as the harvesting was done. The peasants were robbed not only because of low prices but of false weightments by these shahukar-traders. It may also be noted that the shahukars financed agriculture in order to have control on the process of fixation of prices of the agricultural commodities. The conditions in the southeast of the province were the worst because this area came under the colonial control long back in 1809 and was comparatively more marked in drought and poverty environs. (Singh, 1996:220)

Moreover, just as soaring cotton exports left Beraris naked, the wheat boom perversely increased hunger amongst Punjabis. “The enormous [market] demands and the prospect of government purchases led to speculative hoarding, creating shortages and pushing prices to famine levels. Depletion of stocks as an outcome of exports increased the vulnerability of the exporting areas to famines both in normal times and harvest failures” (Singh, 1996:221).

In his influential recent overview of the Raj, Sarkar finds that the commercialization of Indian agriculture “emerges on analysis to have been often an artificial and forced process which led to differentiation without genuine growth . . . [to the] built-in tendency of the entire system against significant advances in productive technology and organization (Sarkar, 1982:30–31). Indeed, as Indian naturalists have long argued, was the state itself that ultimately ensured that no real benefit could flow from export booms to the direct producers. On the expenditure side, a colonial budget largely financed by taxes on farm land returned less than two percent to agriculture and education, barely four percent to public works of all kinds, while devoting a full third to the army and police (Stein, 1998:263). On the extractive side, Ricardian principles glossed relentless fiscal pressure. In theory designed to transform ryots and zamindars into modernizing market-oriented farmers on the English model, the revenue settlements instead subjugated the peasantry to the local despotism of the village moneylender. By making the revenue demands too high and inflexibly fixing them to the estimated average produce of the land, with scant regard for climate variation, Bagchi writes, the British “made it certain that a number of the designated revenue-payers would lose their titles every year. . . . The creditor-debtor relationship was easily

transformed into one in which the debtor delivered up whatever surplus produce he had to the creditor. The creditor became his landlord, and de facto the master of his whole family" (Bagchi, 1992:6, 38).

This system posed diabolical obstacles that prevented the producer from taking any advantage of higher market prices. In the late nineteenth-century Bombay Deccan, for example, the annual process of revenue collection began with the impounding of grain in village stockyards. In order to eat from their own harvest, the ryots had to immediately borrow money to pay off the taxes. Typically the moneylenders bought the crop at half of the current market value but lent money at a usurious rate of interest, 38 percent (Guha, 1984:27, 70). If the peasant was unable to promptly repay the principal, the exorbitant rates of interest immediately ballooned to astronomical dimensions. "I remember one case which came before me," wrote a former district officer, "in which a cultivator was sued for 900 rupees, principal and interest, the original debt being only ten rupees worth of grain, borrowed a few years previously" (Scott, 1904:21).

Despite the famous Deccan Act, which followed the anti-*bania* riots of 1875 and was intended to prevent mass foreclosures, Indian courts continued to apply English civil law against the peasantry with deadly efficiency. In 1895, Lord Elgin's land transfer investigation revealed that fully a fifth of the land in the Bombay Deccan was held by "non-agriculturalist moneylenders," both indigenous Brahmins and Marwaris from Rajasthan (Charlesworth, 1983:193-95). Indeed, as the Famine Commission of 1901 itself admitted, while the authors of the Bombay revenue system "expected the accumulation of agricultural capital," in operation "their plans did not promote thrift, nor did they conduce to the independence of the ryot. They looked for the capitalist cultivator; and [instead] we find the *sowkar's* serf" (Charlesworth, 1983:40).

The moneylenders (of whom there were at least 500,000 by the 1870s) and wealthy landowners were profoundly anti-developmental for eminently neo-classical reasons. As Washbrook points out, there was little incentive to invest in agriculture when usury consistently yielded more profits: "[i]t became progressively more 'economically rational' to sustain accumulation through coercion and the 'natural' decline in the share of the social product accorded to labour rather than to put valuable capital at risk by investment" (Washbrook, 1988:20). Likewise, Baker adds, "creditors gave out 'loans' in order to be able to secure dependants and it would have been foolish to make 'loans' which, by improving the productivity of the debtor's land, helped him to become more independent" (Baker, 1984:156). Although the British periodically denounced the "parasitism" of the moneylenders and grain speculators, the sahibs served as both father and mother to the system. "In these circumstances, peasant agriculture had no chance of developing into capitalist farming" (Chowdhury, 1967:318-20).

China: the Commercialization of Subsistence

The “two Chinas” long predate the Cold War. Every foreign traveler in Qing China was struck by the dramatic contrasts between the bustling mercantilism of the Yangzi Valley and the seemingly frozen subsistence economy of the Yellow River basin. The silk and cotton monocultures of the Yangzi delta, supported by rice imports from the middle river provinces, generated impressive prosperity during the Qing Golden Age of the eighteenth century at the cost of deepening social division between absentee landlords, leaseholding tenants, and landless semiproletarians. The great recession of the nineteenth century—induced by opium imports, silver outflows, population pressure, and ecological decline—culminated in the anti-Confucian Taiping Revolution, whose millenarian, leveling impulses threatened landlord as well as mandarin power. The immense destruction of the Taiping wars, especially in the middle Yangzi Valley, sapped decades of economic growth and bankrupted the Qings, while leaving intact the hegemony of the Yangzi delta merchant elites and the European allies upon whom they increasingly depended.

By contrast, North China was a world apart. The largest economy of independent peasants on earth, its historical gentry had been decimated, first by the Mongol invasions and then by the rebellions that had brought the Ming to power. The Qing, in turn, supported smallholder agriculture as the preferred fiscal base for their centralized state while freeing the peasantry from the heavy burdens of forced labor imposed by the Ming. In contrast to the later fiasco of the ryotwari system in British India, Qing policies—like the freezing of corvee revenues in 1713 and state-insured protection against drought and flood, as well as the appreciation of copper currency in the mid-1700s—greatly benefited the freehold peasant majority. As even Wittfogel was forced to concede in his famous disquisition on “Oriental despotism,” peasant freehold in Northern China was a massive historical fact (Wittfogel, 1957:290).

Although far from extinct, of course, landlordism remained a subordinate relation of production in the Yellow River provinces, preponderant only in pockets or within the periphery of cities (Naquin and Rawski, 1987:22, 146, 219; Will, 1990:64, 65). In contrast to the late nineteenth-century Yangzi delta, where Philip Huang estimates that 45 to 100 percent of the cultivated land (depending on the hsien) was leased from landlords, only 18 percent of the cropland in the Yellow River plain was rented. Nearly 80 percent of rural males worked primarily on their family farm, versus only 9 percent who worked mainly for wages. Instead of urban absentees, “managerial farmers,” employing hired hands in addition to family labor, tended to be the agricultural elite (Huang, 1990:42, 60). Because wealthier peasants supported larger households, however, per capita income differentials tended to be small, while diet (40 percent sweet potatoes, 31 percent vegetables and 28 percent grain), as Sidney

Gamble discovered in his famous 1920s study of Ting hsien in Hupei, differed surprisingly little between most rural income groups (Gamble, 1954:52, 64, 110).

Although they were often described as the first shoots of rural capitalism, Huang has shown that northern managerial farms “resembled capitalist enterprises only in their use of wage labor: they clearly failed to generate any real advances in labor productivity, whether through economies of scale, increased capital use, or technological improvement” (Huang, 1990:71). Likewise, the elite kinship networks so central to the highly commercialized economies of the lower Yangzi or the Pearl River deltas were peripheral in the more egalitarian north.

Huang argues that the harsher northern environment and relatively greater frequency of natural disasters comprised crucial factors in differentiating the north’s social structures and land-tenure patterns from the south (Huang, 1990:5). In a climatic zone, where annual rainfall variability exceeded 30 percent and irrigation was the exception rather than the rule, the average rates of return on agriculture were generally too marginal to attract substantial merchant capital. But the environmental instability of agriculture was counterbalanced by the deeply anchored monolithicism of the smallholder social order supported by an imperial state (Huang, 1990:102–106, 152).

If to most foreigners the cultural and ecological landscapes of the north epitomized China’s inability to modernize, to others they represented the very essence of China’s epochal achievement as a civilization. Francis Nichols, the American journalist who traveled to Sian in 1901 to report on famine relief and the Boxer aftermath for the *Christian Herald*, discovered Jeffersonian as well as Confucian virtues in the Shensi yeomanry. Although the peasants were poor,

there is a complete absence of that condition that we call “poverty.” . . . By Shensi roadsides one finds some professional beggars, most of whom are opium-victims, but here are very few “unemployed,” except as the result of a universal calamity like a famine or a flood. Shensi farms seldom contain more than 3 or 4 acres, but they often remain in the possession of one family for generations. No one ever seems to desire more land or hold it solely for the purpose of selling it again. (Nichols, 1902:128–129)

Moreover, Nichols discovered that oriental despotism, supposedly embodied in the mandarin suppression of all free speech, was belied by a rambunctious civil culture of irreverent political gossip and scolding public criticism (Nichols, 1902:128–29).

In “hidden Shensi,” where he temporarily swelled the foreign population to two, Nichols found himself overwhelmed by the cultural and

agronomic continuity of contemporary peasant life with ancient Han China. As a courageous critic of imperialist calumnies against the Chinese, he can be easily forgiven for romanticizing peasant traditionalism as well as for failing to recognize the changed relations of production that were partly responsible for hideous starvation during the 1899–1901 drought. Everywhere in Shensi, the declining economic and ecological viability of smallholder agriculture over the course of the nineteenth century was expressed by increased peasant dependence on cash crops like opium and cotton. Indeed, Nichol's admirable farmers were almost universally entrapped in a hopeless system of petty commodity production on subminimal plots that annually wagered household survival on fickle market prices and rainfall patterns. At the same time, manufactured imports were laying siege to vital rural handicrafts. Although the only indications of overseas trade (as opposed to traditional inner Asian trade) that Nichols could find in the markets of Sian were imported cotton thread and some foreign cotton fabrics, these stood as potent enough symbols of the destabilizing impact of the world market upon inland China (Nichols, 1902:248–49).

The so-called "single whip" reforms at the end of the Ming dynasty, which transmuted corvees and revenues-in-kind into cash taxes, inexorably monetarized subsistence production. As immigration and high fertility rates supported by Qing antifamine policies began to rebuild populations in the provinces devastated by late Ming warfare to their historical maximums (especially Henan, Shensi, and Shansi, where as much as one third of the cultivated land had been depopulated), the customs of partible inheritance generated growing pressure on farmland (Huang, 1990:5). In the absence of the European alternatives of rapidly growing cities and overseas colonies to absorb supernumary agricultural labor, Qing China struggled to sustain its standard of living within traditional parameters of land use and agricultural technique.

Initially, there was stunning success. In her recent study of Shensi's densely populated Wei River Valley—the site of terrible mortality in 1877–78 and again in 1899–1901—Laura Murray confirms the role of new world crops (especially sweet potatoes and maize) and marginal land reclamation in accommodating population growth at constant levels of per capita output through the mid-eighteenth century. By the 1780s, however, the Wei Valley peasantry was caught in what Murray (borrowing from Mark Elvin) characterizes as a "high-level equilibrium trap" where increasing labor inputs realized diminishing returns in crop yield. With average cultivated land per capita reduced to three quarters of an acre, even the most intense efforts by Wei farmers could barely produce the caloric minimum of grain to maintain their continued labor. In this context, cash crops' higher value per unit of land made them irresistibly attractive to the poorest strata of the peasantry (Murray, 1985:43–44).

Commercialization on these terms was usually more a gamble for survival than an exercise in optimal resource utilization, and cash crops were immediately sold to purchase food and pay taxes, not used to accumulate capital or land. As Murray emphasizes, "land use tended to shift from grain crops to cash crops when population density reached the point that average holdings were too small to supply adequate subsistence grains. . . . Many families [were only] able to survive on plots too small for subsistence farming because of the higher value of cash crops. Most counties with a high level of commercialization also had grain deficits, and their residents depended on complex trade networks" (Murray, 1985: 45, 68, 82, 138).

The Wei Valley case probably typified the logic of subsistence cash-cropping throughout north China. Huang cautions against the common assumption made by development theorists that such peasants were suddenly transformed into the competitive, incipient capitalist subjects of neoclassical economics simply because of their dependency on commodity networks. "This kind of market involvement should not be mistaken for entrepreneurial marketing, nor should such peasant behavior be mistaken for profit-maximizing rationality. Their was the rationality of survival, not of profit maximization" (Huang, 1990:104–5). Moreover, Huang offers a useful distinction between the "survival-driven commercialization" so common in north China and the "extraction-driven commercialization" in the more class-stratified Yangzi delta area where peasants were forced into the market primarily to earn rent payments to landlords and interest payments to moneylenders (Huang, 1990:102–6).

Within the limits of a relatively uniform ecology, North China peasants embraced several alternative systems of cash crop subsistence. Throughout the Yellow River plain, for example, villages commonly sold wheat to the cities or distilleries (like those around Linqing on the Grand Canal) and used the cash to buy coarse grains—millet, sorghum and buckwheat—for their own diet. Likewise, in Shandong, along the route of the Jiaozhou-Jinan railroad, tobacco monoculture supplanted grain production on much of the best farmland. Peanuts were commercially important by the eve of the Boxer uprising in southern Zhili as well as in the semi-arid foothills just north of the Great Wall (Huang, 1985: 124; Will, 1990:178, 180–81). Meanwhile, opium cultivation comprised a primitive form of import-substitution. In the Wei Valley, according to Murray, opium became a major commercial crop only after 1870, when fiscally strapped county governments began to encourage its export to other parts of northern China as their primary tax source. By the late 1890s opium had become the livelihood of a majority of the peasantry in a growing number of counties, especially in the eastern end of the Wei Valley (Murray, 1985:74–75, 79).

For marginal peasants everywhere in China, however, the most important cash crop was cotton. It had two principal virtues. In the first place,

it met with huge, relatively stable internal demand. Second, peasants could add value by processing cotton as spun yarn and woven fabric. The north China plain had originally functioned simply as a periphery to the lower Yangzi textile revolution, exchanging raw cotton for cotton cloth. The northern winters, however, gave peasant households a long slack time in which they could concentrate on spinning and weaving for household use and sale. In Arthur Smith's famous account of *Village Life in China* (1899), the Shandong-based missionary marveled at the grim dedication of northern China's peasants-cum-handloom weavers: "In some regions every family owns a loom (one of the clumsy machines exiled from the West a century ago) and it is not uncommon for the members of a family to take turns, the husband weaving until midnight, when the wife takes up the task till daylight (often in cellars two-thirds underground, damp, unventilated, and unwholesome)" (Smith, 1899:210–11). As in pre-industrial Europe, a vast "putting out" system of cotton handicrafts emerged, centered in the Yellow River delta, which in turn stimulated the further conversion of cereal acreage to cotton in counties as far away as the loess plateaus. Simultaneously, new world crops like maize and sweet potatoes, which demanded less labor for higher yields, allowed producers to devote more land and labor to all phases of cotton production.

Thus, by the middle of the eighteenth century, north China came second only to the lower Yangze in cotton cultivation, which, "replacing grain, occupied an estimated 20–30% of all agricultural land" (Naquin and Rawski, 1987:143). It was not rare to find counties near river or canal transport, as in southern and central Zhili, where 80–90 percent of the population derived its principal subsistence from trading cotton cloth (sold as far away as Korea) for millet. Indeed, for poorer peasants forced to lease land, "there was often no choice at all: once rental terms on land that could grow cotton came to be set according to the market potential of that crop, no tenant could really afford to grow cereals" (Huang, 1990:7, 118–19).

In good years, therefore, cash crops—above all cotton—allowed basically "sub-subsistence" farms to survive in great numbers. Although cotton required twice as much labor per mu as sorghum or millet, this was not a problem in an "involved" economy where labor was abundant and land was scarce. However, as Huang has emphasized in his study of the Hebei-northwest Shandong region, cash-cropping in north China "cut both ways." "The smallholder found that, though his returns became higher, so too did his expenses. The risks from natural or man-made disaster were thus correspondingly greater." Whereas millet and sorghum depended on the late summer monsoon, cotton required ample rainfall or irrigation in the spring: "a relatively dry season at best, with only 10–15 percent of the total annual precipitation." To the extent that households derived increasing subsistence from the sale of cotton or

cotton handicrafts, their survival was mortgaged more precariously than before against ENSO fluctuations. "Drought in the spring could bring total disaster to a household completely dependent on cotton" (Huang, 1985:108).

The boom-bust cycle of cotton production also reinforced social stratification, enlarging the ranks of poor peasants or laborers dependent on seasonal or permanent wage labor. Since partible inheritance dissolved most village-level concentrations of wealth after a generation or two, the growth of a rich peasant class in northern China in the Victorian era was less dramatic than the accumulation of mendicancy and instability below. Unlike the Yangzi Delta, agrarian immiseration in the North was not counterbalanced by the consolidation of big mercantile or agrarian capital. In drought-ravaged northern Shaanxi, where survivors of the Long March would regroup in the mid-1930s, "it could be said that socioeconomic differences within the region were really a matter of varying depths of poverty" (Keating, 1997:15). Reliance on the market only exacerbated the radical nakedness of these pauper layers in face of the threats of drought and flood. Huang cites the apprehensions of a mid-nineteenth century magistrate in a Shandong county where most of the sown land was dedicated to cotton. "The rich do not store grain, and the poor rely entirely on hiring out and the board that comes with wage labour. Once confronted with natural disaster and bad harvests, they are at a complete loss" (Huang, 1990:107-8, 114).

In addition, microcommercialization added new exposures to such manmade disasters (often interacting with the natural) as commodity cycles, price inflation, and monetary speculation. The diversion of so much cultivable acreage from grain production made tens of millions of formerly autonomous peasants directly dependent on the grain trade and the price ratio between cash crops and subsistence cereals. Meanwhile, after 1880, folk textiles faced the competition of factory-produced imports from India and Japan. Handspun yarn declined from 98 percent of China's consumption in 1876 to little more than 40 percent in 1900, and cotton merchants were transformed from peddlers of domestic production into salesmen of foreign yarn. India's export to Asia, principally China, meanwhile increased from 21.3 million pounds in 1878 to nearly 300 million pounds in 1905 (Sheel, 1989:54-57). "A peasant spinner simply could not overcome the overwhelming advantage of a technology by which, according to one estimate, he could be outproduced by as much as 8,000 percent by a worker using a power spindle. The result was a product so cheap it sometimes sold close to the cost of raw cotton" (Huang, 1990:132). Although handloom weaving, which benefited from better factory-made yarn, struggled on against machine competition for another generation, the collapse of cotton spinning in the 1890s had profound repercussions for the poorest strata of north China peasants.

In his study of the social origins of the Boxer movement, Esherick argues that western Shandong became the seedbed of revolt in the late 1890s precisely because of its combined vulnerability to natural disaster and foreign textile imports. The changed course of the Yellow River after 1855 and the consequent silting up of the Grand Canal, combined with an increased frequency of flood and drought to make the depressed regions along the Shandong-Zhili and Shandong-Jiansu-Henan borders ever more dependent on cotton handicrafts for sheer survival. "Too isolated and too lacking in alternative resources to enjoy any of the stimulative effects that the treaty port economies sometimes generated in their more immediate hinterlands," Western Shandong was economically devastated in the 1890s by the loss of its traditional markets to factory-made Indian cotton yarn and cloth (Esherick, 1987:72–73). The imports were the dragon's teeth, sown by the world market, that eventually grew into peasant insurrection.

China: the Depletion of the Granaries

Long-distance grain trading only weakly supported the commercialization of subsistence in north China. The raw cotton and cotton handicrafts, wheat, tobacco, and opium grown by poor peasants were principally exchanged within "cellular" local markets usually coinciding with county boundaries or, more rarely, with the north China regional system (Wilkinson, 1970:198–99). The two-way flow of goods between the periodically grain-deficit north and the surplus-producing Yangzi Valley did not suffice to protect against harvest shortfalls on a large scale. As late as 1900, the interregional trade of farm products comprised only seven percent of total empire-wide production (Perkins, 1969:119, 136). Regular long-distance grain trading was confined to east-west corridors within southern China where economic specialization was most developed—from Sichuan and Hunan down the Yangtze River or from Guangxi to Guangdong, for example. By contrast, the flow of grain from south to north—frequently against the gravity of market prices—required the heavy lifting of the imperial tribute system. Ironically, as northern peasants increasingly staked their survival on cash crops, they became, if anything, more dependent on the state's capacity to ensure the interregional redistribution of grain outside of market mechanisms. And this depended, in the first place, on the empire's fiscal health.¹³

On the eve of the French Revolution, the Qing treasury still had a surplus of 70 million taels, but the government rapidly expended this in costly military campaigns or allowed it to be squandered by corrupt courtiers. By the time the Jiaqing emperor took the throne in 1796, the Golden Age had ended and fiscal crisis was becoming chronic. The long war (1796–1804) against the White Lotus rebels—"the first major human

calamity (*renhuo*) in about 120 years"—sapped both the treasury and the tribute grain reserves (Will, 1990:291). "The food supply priorities of the state shifted to provisioning large numbers of troops," a diversion that would become almost total during the Taiping and Moslem civil wars of the 1860s and 1870s (Will and Wong, 1981:91). Immensely costly flood catastrophes, which had no equivalent in the eighteenth century, also conspired to push the late Qing state deep into insolvency. There were no less than seventeen consecutive years of flooding between 1839 and the final Yellow River cataclysm of 1855 (Domros and Peng, 1988:198). "The cost to the state in social disruption, lost agricultural income, and relief and repair funds was immense. Combined with the expense of the Opium War and the state's already weakened fiscal conditions, these floods left the state treasury barren" (Dodgen, 1991:51). Even greater calamities, of course, followed in the 1850s when the rain-swollen Yellow River hijacked the course of the Daqing River—one of its ancestral channels—to switch deltas from the Yellow Sea to the Gulf of Bohai just as the Taiping Revolution was cutting off Beijing's all-important revenues and grain tributes from the Yangzi Valley (Dodgen, 1991:51, 55–56).

The Qing fiscal system was also undermined by price inflation rooted in China's opium-generated trade deficits as well as the monetary perturbations that followed the great powers' adoption of the gold standard in the 1870s. Wang Yeh-chien has estimated that the real value of land revenues declined by almost two thirds from the Golden Age of the 1750s to the Boxer uprising. From the mid-nineteenth century on, the Qing met with only partial success in using commercial taxes and special surcharges to arrest the erosion of their agrarian tax-base. Their increasing reliance on tax farmers to collect old and new revenues simply increased illegal "leakage." At the end of day, the fiscal crisis came to weigh most heavily on provincial and county governments who depended even more than Beijing on land revenue yet were increasingly expected to shoulder additional responsibilities for self-defense, flood control, irrigation, and famine relief (Wang, 1973:113, 121, 125–26).

Not surprisingly, all these contradictions expressed themselves in declining peasant food security, at least in areas poorly served by the inter-regional rice trade. The ever-normal and charity granary systems, which stored as much as 48 million *shih* of reserve rice, wheat, and millet in the high Qing, were rapidly depleted (Hsiao, 1960:146). "Even in the early eighteenth century, when the population of China was not much more than half of its 1840 (or 1930) level, this amount probably represented little more than 3 or 4 per cent of the nation's grain output" (Perkins, 1969:164). Will cites an edict of 1799 complaining that only one quarter of the ever-normal granaries had stored their full quotas (Will, 1990:276). Reduced to these levels, the imperial granaries could no longer act as economic flywheels "normalizing" grain prices. By the 1820s, according to R. Bin Wong, the empire-wide grain reserves had fallen below 30 million

shih; by the 1850s, they were under 20 million (Wong, 1982:783). Twenty years later, at the onset of famine in 1876, there were probably less than 10 million shih of grain left in the entire system (Perkins, 1969:164).

At a local level, this often led to complete collapse. Even in the Golden Age, the ever-normal mechanism of restocking granaries with autumn purchases had broken down in much of the northwest. By their own account, granaries in Shaanxi and Gansu were forced to distribute grain more frequently than they could afford, and Beijing had to finance the ensuing deficit (Wong, 1981:60–61). From the calamitous watershed of the White Lotus Rebellion, the regional disequilibrium between the annual harvest and minimum consumption was exacerbated by a vicious circle of declining agricultural productivity, ethnoreligious warfare, and government insolvency.¹⁴ Gentry-managed community and charity granaries, which took up some of the burden of food security elsewhere (Hunan and Sichuan, for example), could not brake the decline of state granaries in the impoverished loess areas. As a result, granary inventories in some counties of Shaanxi had fallen to less than ten percent of their quotas by the early 1870s (Hsiao, 1960:154). On the eve of the great drought, in other words, northwest China was ripe for catastrophe.

The empire-wide rundown in ever-normal granary inventories was accompanied by an increasing diversion of tribute grain flows from the inland North China plain. Although, as Dwight Perkins points out, the “amount of grain going north to Peking was trivial in comparison to total national output (0.2–0.3 per cent),” it represented about 15 percent of the revenues of the central government and, as in the case of the 1743 drought, constituted a strategic famine reserve close at hand in north China (Perkins, 1969:150–51). Four provinces (Jiangsu, Jiangxi, Anhui, and northern Zhejiang) supplied most of the tribute, and the Jiangnan elites lobbied intensely to substitute the coastal route for the Grand Canal. “Beginning in the 1870s, the coastal steamer rapidly replaced grain-tribute junks on the Grand Canal. By the 1890s, the only substantial amounts of grain carried by canal junk were the shipments of millet from Shantung.” Beijing’s port of Tianjin (Tientsin) boomed as a result, while the older Canal entrepôts with their large workforces of bargemen and laborers—key constituencies of the Boxer uprising—declined (Perkins, 1969:150–51). Although the imperial granaries at Tongzhou, near Beijing, were still theoretically available for relief campaigns, Will shows that by the end of the Jiaqing reign in 1820 tribute grain had ceased to play a major role in combating famine (Will, 1990:289).

As the state infrastructure deteriorated, Beijing increasingly relied on a combination of cash handouts and local philanthropy to relieve famines. In 1831, the Daoguang emperor, noting “the wretched condition” of the imperial granaries, “remarked that ‘for this reason, when a province is hit by calamity, [the local authorities] rarely ask that [the victims] be aided with ever-normal grain; in general, they content themselves with applying

for silver from the provincial treasury and converting it into copper cash to be distributed [to the population]” (Will, 1990:183). As during the 1877 and 1899 famines, the resort to cash relief had fatal flaws.¹⁵ For example, the market frequently could not accommodate emergency demand. Either the explosion in grain prices quickly exceeded the minimal survival of cash relief, or—as in the extreme case of Shanzi—there was simply not enough grain locally available at any price. Attempts to purchase and transport large amounts of grain at one time into the loess highlands only produced catastrophic transport pile-ups, like that at Guguan Pass in 1877. Unlike the Yangzi Valley, where water transport of rice remained cheap and efficient, grain commerce in the drier northern provinces suffered from the paucity of navigable waterways, especially during droughts. According to John Lossing Buck’s epic study, *Land Utilization in China*, only two out of 51 northern villages had access to water transport, in contrast to 23 out of 80 in the south (Buck, 1937:344, table 2). From the perspective of a society dependent on commercial grain for survival during famine, overland transport was staggeringly expensive and inefficient.

The monetarization of relief also made it even easier for venal officials to pilfer funds. The practice of selling local offices to generate relief funds, rampant in the nineteenth century, expanded the number of lower-level fiscal predators. As Will points out, everyone in late Qing China, from the emperor to the poorest peasant, believed that honesty and efficiency in local government had declined dramatically from the 1790s:

As early as 1801, the year the Jiaqing emperor closely supervised the special measures carried out in Zhili in the wake of severe flooding, he was struck by the troubling thought that the skyrocketing cost of relief in other provinces was perhaps better explained by the profits made by the “clerks and runners” than by the number of ruined peasants pure and simple; and later in the reign, various memorials spoke of the extortions exacted by investigators and sub-bureaucrats, unauthorized deductions from provincial funds, registers of disaster victims drawn up without verification of any kind, distribution centers established with attention to actual needs, gruel containing sand, fraudulent exchange rates in converting silver to copper, and other abuses (Will, 1990:314).¹⁶

Frustrated by local corruption and overwhelmed by fiscal exigencies, the Qings increasingly disengaged themselves from the grassroots level of relief administration. As Mary Rankin, Mark Elvin, and others have emphasized, the formidable state capacities of the eighteenth century gradually devolved to local elites during the long nineteenth-century siege by imperialism and domestic rebellion. Local gentry degreeholders increasingly took over responsibility for tax collection, local law-and-

order, flood control, and famine relief. "If the magistrates and the provincial hierarchy were not always inactive, their role was usually limited to summoning the local elites to a meeting where they would ask them to set up an organization (if they had not already done so), officially endorse their efforts, and, if necessary, badger them." When the resources of the locally-managed *zhenju* (relief bureaus) and their privately stocked charity granaries proved inadequate to the task, the late Qing state turned to the wealthy Jiangnan elites, who donated rice and cash, provided assistance with transportation, and opened their city gates to famine refugees from the north. However, this makeshift system, which failed so catastrophically in 1877 and 1899, never constituted a real alternative to the vertically integrated state infrastructure of the previous century, with its abilities to maintain local ever-normal granaries as well as to carry out the interregional transfers that "alone made large-scale and long-lasting famine relief possible" (Lippit, 1980:67).

Accordingly, the reconstruction of the granary system and restoration of peasant food security became central demands of all anti-Qing revolutionaries. Long before Mao's "Yenan Way," the Taipings envisioned a more directly "communist" system for redistributing the entire agricultural surplus through new state granaries, outlined in their utopian manifesto *The Land System of the Heavenly Dynasty*:

All land under heaven will be cultivated in common by all who live under heaven. . . . [The produce from] all land under heaven will circulate to equalize abundance and scarcity. The produce of one locality where the harvest is good will be transported to give relief to another place where famine occurs. . . . At harvest time the *liang-ssu-ma* [headmen of twenty-five households] will supervise the *wu-chang* [headmen of five households] and will, after deducting [quantities of grain] sufficient for food for each of the persons belonging to the twenty-five households until the next harvest, [collect] the surplus and send it to the state granaries (Lippit, 1980:315, 318).

Table 5 Transport in the North China Plain: Comparative Efficiency

Method	Tonnage	Cost index
River junks	40–100 tons	1.0
Carts	1 ton	3.3
Pack mules	.125 ton	8.2
Coolies	.09 ton	8.6

Data from Cressey, 1934:179.

Race and Capital in the Nordeste

Nineteenth-century Brazil, like contemporary India, a subcontinent much visited by El Niño, had two other things in common with that country. First, while nominally independent, its economy, especially in the Nordeste, was so dominated by English investors and creditors that it has become the classic example of an “informal colony” in modern literature on economic dependency (Frank, 1967:162–64; Burns, 1970:102; da Costa, 1985:21–24). Second, economic development on a national scale ground to a halt during the second half of the nineteenth century with no appreciable increase in per capita income or productivity. While per-capita GDP soared by 600 percent between 1800–1913 in the United States and even 150 percent in Mexico, Brazil saw zero growth. A fabulous coffee boom in the São Paulo region was counterbalanced by the equally spectacular economic retrogression of the Nordeste (Dean, 1986:685; Leff, 1997:1, 35). As in the case of the Deccan, a formerly core region was transformed into a periphery of hunger. However, whereas in India increasing vulnerability to famine went hand in hand with notable infrastructural modernization in the late nineteenth century, the modern history of the sertao is striking for the absence of any significant state developmental role until the 1960s and the threat of Castroism.

British commercial and financial hegemony in Brazil had ancient roots in Portugal’s vassalage to London during the seventeenth and eighteenth centuries. When the Braganza monarchy relocated under “tremendous British pressure” to Brazil in 1808, the move immediately paid off in a commercial treaty that gave British imports preference over those from Portugal. Then, in 1827, Emperor Dom Pedro repaid British recognition of his slave empire by codifying dependency in one of the most inequitable trade agreements in history: a nonreciprocal treaty that limited taxes on British imports to 15 percent *ad valorem* while allowing the British to impose 300 percent tariffs on Brazilian coffee. Although the United States made substantial commercial inroads during the 1850s, the Civil War cotton boom reestablished British preeminence. On the eve of the Grande Seca, Britain supplied 51 percent of Brazil’s imports and consumed 37 percent of its exports (Haber and Klein, 1991:337–40).

However, the deepest level of British hegemony was financial. Chronic trade deficits repeatedly found financing through punitive British loans (12.5 million pounds by 1852) whose interest payments generated permanent budget deficits financed in their turn by yet more foreign bonds (Becker and Egler, 1992:32). “The London Rothschilds were the empire’s exclusive bond-raising agents, the leading exporters and importers were all British, and all the early railroads were British-owned or financed. The largest British bank, the London and Brazilian, had considerably greater financial resources than the semi-official Bank of Brazil” (Dean, 1986:708). In contrast, the domestic banking system was stunted and undeveloped.

As late as 1888, 13 of the 20 Brazilian provinces had no local banks at all, and the total capital of the entire national system was only 48 million pounds. The state bank largely confined itself to the conservative management of the money supply in the interest of its British creditors (Harber, 1997:151).

As a consequence, domestic capital formation was severely bridled. "The foreign banks were notorious . . . [for] their reluctance to make long term loans to agriculture or domestic concerns" (Deutsch, 1994:190). In turn, commerce was skewed toward foreign middlemen and British imports, especially in the Nordeste. In 1890s Bahia, for example, only one of 11 licensed exporters was Bahian, and 24 of 64 import houses specialized in imported British textiles (Levine, 1992:55). Moreover, foreign capital vigilantly policed the growth of any saplings of competitive, indigenous industrialism. For example, when entrepreneurs in the Nordeste tried to increase value-added income by setting up cotton-related manufactures, British exporters retaliated. Warren Dean cites the telling example of a sewing thread mill in Alagoas that was purchased by an English firm for the sole purpose of dismantling it and dumping the machinery into the São Francisco River (Dean, 1986:708).

Despite its elites' vast aspirations to a modernizing tropical empire, the developmental autonomy of the Brazilian state was severely circumscribed by foreign debt, a primitive banking system, and the volatility of its export income. Leff argues that in land-rich Brazil—in contrast to India and Japan—there was "little pressure of population on land," meaning that "Ricardian rent, the basis for land taxation, was small." The Empire and the conservative republic that succeeded it in 1889 depended on export taxes for revenue, but "until the end of the nineteenth century, the volume and growth of Brazil's foreign trade were too small to permit a high level of government expenditure" (Leff, 1997:53–54). The adoption of the international gold standard during the 1870s "automated" Brazil's unequal exchange relationships. Although Rio might balk at British attempts to steer its foreign policy, London retained through the early 1900s quasi-veto power over major capital flows within the Brazilian economy.

Informal imperialism, however, did not affect Brazil's regions equally. If the Northeastern sugar *fazendas* were the very paradigm of dependence on British capital, the southern coffee industry was relatively more independent. As Ruthanne Deutsch points out, "the paulistic market was never the private sphere of influence of a single country or a single financial combine" (Deutsch, 1994:167). First linked to the coast by railroad in 1872, the fertile São Paulo region supplied half of the world's coffee by the 1890s. After the overthrow of the Empire in 1889, an informal pact between the Republican parties of São Paulo and Minas Gerais "guaranteed these two states control of the economic policy of the central government," supplanting the old landowning elites of Rio, who had been the chief beneficiaries

of the Empire. However, the new dispensation was sweetened by an elaborate system of bribes and concessions that reinforced the local power of the *coroneis* in the smaller states (Dean, 1986:723; Fritsch, 1988:3).

Despite its nationalist rhetoric, the "Revolution of 1889–91" did nothing to address export dependency or the financial dominance of the City of London. Indeed, with the consolidation of Paulista power, Brazil became a monoculture. "It is remarkable that Brazil, a country of immense territory and varied resources, participated in world trade essentially as a planter of a single crop: coffee (Dean, 1986:696). Moreover, the developmental ambitions of the new Republic were almost entirely concentrated on railroad construction in the dynamic coffee-growing core. "National integration" meant little more than the Paulistas in Congress occasionally scratching the back of other oligarchs. Unlike Victorian India, with its impressive railroads and interregional grain trade, Brazil remained an "archipelago" of distinctive economies separated by dauntingly high internal costs of transportation until the early twentieth century. Indeed, "class interests were so disparate as to raise serious questions concerning the validity of using the nation as a unit of analysis" (Leff, 1982:7).

The rise of the coffee states inevitably accelerated the decline of the northern sugar littoral. Contemporary Brazilians are used to thinking of their country as "Belindia: Belgium in the south, India in the north," but, as Deutsch shows, "around 1870, the quality of life and the level of economic development in the Northeast rivaled, if it did not surpass, that of the Southeast" (Deutsch, 1994:3–5).¹⁷ This quickly changed, however, as real per capita income in the once economically dominant northeast fell by 30 percent (by 1913) in tandem with the collapse of its chief exports. Sugar and cotton, which in 1822 comprised 49 percent of Brazil's export income, contributed barely three percent in 1913 against the 60 percent represented by coffee (Leff, 1997:35). Meanwhile, warehouses at railroad hubs supplanted local markets and town life atrophied. The rapid urbanization of the southeast after 1880 contrasted with relative deurbanization in the north (Deutsch, 1994:86).

The dismal decade of the 1890s, which conjugated drought with the international deflation of commodity prices and a national financial panic, was particularly devastating in the Nordeste. By 1897, for example, the transport price of sugar exceeded the selling price offered by brokers, and numerous plantations and *usinas* (sugar refineries) went belly up (Leff, 1997). ("Only southern Bahia's cacao region avoided the overall economic decline of the 1890s, chiefly because prices for cacao on the world market rose during this period and planters were able to profit from cheaper labor costs because of an influx of migrants driven from the sertao by drought"[Levine, 1992:55].)

It is not immediately obvious why the late nineteenth century Nordeste should have undergone such extraordinary economic devolution. Certainly other primary producers made up for falling export prices with

higher productivity and increased output. "In view of the rapid growth of world demand for cotton and sugar during the nineteenth century," Leff writes, "Brazil's failure to expand its exports of these products much more vigorously seems astonishing" (Leff, 1997:27). Leff's own explanation hinges on the exchange rate consequences of Brazilian coffee's dominant position in the world market. Under the gold standard system, strong coffee earnings led to the automatic appreciation of the *milreis*, which, in turn, raised northern sugar and cotton prices to uncompetitive levels. In this view, the Nordeste's monetary integration with the rest of Brazil comprised the region's biggest problem. As Leff writes, "[t]he coffee-dominated exchange rate squeezed factor returns and priced ever-larger quantities of the northeast's sugar and cotton out of the world market" (Leff, 1997:35–36).

The decline of export competitiveness brutally pruned the foliage of the Nordeste's class structure. If successive southern-dominated governments assuaged the great northern oligarchs with regular political kickbacks (often in the guise of "drought aid"), more modest *fazendeiros* were left to the mercy of market forces. From about 1875, control over production began to pass into hands of the owners (often foreign or foreign-born) of modernized *usinas*. "The capability of the *usinas* to handle a greater load of cane called for further monopolistic consolidation of land resources; in the wake of this process, small and middle landowners became uprooted" (Pang, 1981:2). The fate of ex-slaves, of course, was unimaginably more difficult in an economic system that no longer required the same huge levies of labor power. As the Nordeste's economy slumped into a coma, supernumerary labor was either pushed into the *sertão's* "black, barren fields of hunger" or induced to gamble with disease and exploitation in the rubber forests of Amazonas.

What did not happen in the last quarter of the nineteenth century was what neo-classical theory would have predicted as an automatic reflex: the emigration of northern labor to southeastern growth poles. Instead, from the late Empire, national and local governments began to heavily subsidize mass immigration from Italy, Germany, and Portugal. Even northeastern state governments fervidly embraced "Europeanization." One extraordinary example could be found in Bahia during the terrible "Two Eights" drought-famine of 1888–89. While state authorities road-blocked *retirantes'* route to the cities and forcibly interned them by the thousands in camps, they continued efforts to lure European immigrants with expensive subsidies, though few were tempted (Levine, 1992:49). For their part, southeastern coffee planters wanted only "white" overseas laborers after Emancipation, and soon made this federal policy in the new Republic. (They later amended the policy to include Japanese as well as southern Europeans.)

"Why were the coffee planters in the southeast more willing to finance immigration from Europe than from the northeast?" (Leff, 1977:39). Leff

believes that “part of the answer may have been the prevalent racial attitudes on the part of the coffee planters, which led them to prefer European to mulatto workers,” while Deutsch points to “cultural biases on the part of Southeastern planters against native Brazilian workers” (Leff, 1997:39; Deutsch, 1994:163). Both understate racism as public policy. Gerald Greenfield has shown how liberal discourse about drought and development in the late 1870s revolved around urban perceptions of the “dark, primitive world of the hinterland” and “retirante inferiority and aversion to labor” (Greenfield, 1992:385–396). Moreover, the Brazilian Republic was probably the first government anywhere explicitly committed to largescale “positive Eugenics.” Whereas mass European immigration into the United States in the 1890s was seen as simply providing human fuel for the economy, Brazil’s elites also wanted to use immigration to radically transform the nation’s racial physiognomy. In a nutshell, they were obsessed with “de-Africanizing” Brazil.

Ultimately, the War of Canudos in 1896–97 became a macabre racial allegory driven by elite fears of the northern poor whom they denigrated as *caboclos*: a racial caste strongly marked by admixture of Indian ancestry with Portuguese and African. The demonized figure of Antonio Conselheiro was frequently invoked to justify the urgency of Europeanization. “Always insecure over the rest of Brazil’s whispers that Bahia’s leading families had intermixed so much with the *gent de cor* during the heyday of slavery, the Bahians seized the conflict as a way to demonstrate their commitment to continued progress on the European model” (Greenfield, 1992:56). In this way, European immigration became the deliberate substitute for either developing the north and/or shifting northern labor southwards.

As a result, scientific racism helped create the mother of all dual labor markets. “The highly elastic supply of labor from overseas meant that output could expand at a rapid pace in Brazil’s advance sector without raising the wages of workers in the rest of the economy (Leff, 1997:39). Indeed, by 1889 the British consul Pernamuco reported to London “that labor there was cheaper than anywhere in the world except in Asia” (Galloway, 1971:footnote 54). As Celso Furtado famously argued, the Northeast, following the pattern of previous export booms and busts in Brazilian history, regressed on a diet of super-cheap labor. As in Victorian India or late Qing China, the glut of labor power created massive disincentives to productivity-raising capital investment (the *usinas* being a partial exception). “This economic ‘involution,’ as Furtado called it, was the opposite of development because each historical export boom until coffee (brazilwood, sugar, gold, and contemporaneous with coffee, rubber) led to retrogression, not to sustained growth” (Love, 1996:163).

Needless to say, large northern landowners welcomed the emergence of this overstocked labor-supply without realizing that they were, in effect, embracing their own underdevelopment. Indeed, they protested

violently against anything—such as Conselheiro’s saintly and autarchic city of Canudos—which appeared to threaten their abundance of labor. Such a surfeit of immiseration might have produced a social revolution elsewhere, but the northeastern littoral had the vastness of the sertao as a social safety valve. Indeed, from the 1870s onward, the Nordeste was effectively capitalized on the fluxes of labor between the backlands and the coast. Potentially explosive accumulations of poor and unemployed laborers in the littoral were drained off into the subsistence economy of the sertao, then periodically regurgitated toward the coast by drought. In effect, the sertao provided welfare for the poor, while El Niño guaranteed that desperate laborers would always be available to depress wages on the coast. Even in the Cearan sertao, virtually depopulated by the great *secas* of the 1870s and 1890s, local oligarchs were able to find profit as labor contractors for Para and Amazonas.

Thus, while northeastern elites had the greatest interest in “drought relief” (funds that they largely intercepted), they were little disposed toward any real development or ecological stabilization of the sertao. The all-out national mobilization to destroy Canudos contrasted starkly with official apathy over the fate of *sertanejos* in the four successive El Niño droughts between 1888 and 1902. Symptomatically, the great domestic debate of the 1890s occurred not over arresting the decline of the Nordeste, but between Paulistas who urged more state spending in the southeast and the opposition who wanted to bolster Brazil’s international credit after the milreis lost half of its value to runaway inflation between 1892 and 1897. The Rothschilds rescued the government in 1898 with a loan of ten million pounds in return for a surcharge on import duties and a deflationary budget that left little change for public works (Dean, 1986:690).

The economic and political hegemonies, respectively, of the British and the Paulistas, plus the northeastern oligarchs’ deepening investment in their own backwardness, thus explains much of the structural context of the century-long burlesque of “irrigating the sertao.” In the wake of successive El Niños, national commissions and visiting foreign irrigation experts drew up vast, never-implemented plans for stabilizing agriculture and human settlement in the backlands. The few hydraulic projects that were actually built, beginning with the Acude Quixada reservoir in Ceara in 1899, “stored water which benefited large landowners and protected their cattle by providing pasture and watering facilities but . . . left most of the low-income agricultural population untouched” (Hall, 1978:5). By 1941, only 500 hectares of the sertao had actually been irrigated. Twenty-seven years later, when a military dictatorship worried about possible Guevarist *focos* in the Nordeste hired Israeli consultants to conduct the first comprehensive irrigation survey, conditions of life for millions of drought-stricken and immiserated *sertanejos* were little different from the days when Conselheiro and Cicero first preached Apocalypse on the backroads of Ceara.

Notes

1. For a typically cavalier view, see Lardinois (1985:454).
2. “[1743–44 was] another exceptional period in the eastern hemisphere, which corresponds with QN El Niño of 1744, although conditions were more markedly dry in the east in 1743” (Whetton and Rutherford, 1999:243–46).
3. “The first Qing emperor envisioned ever-normal granaries in county seats, charity granaries in major towns, and community granaries in the countryside. Ever-normal granaries were to be managed by members of the magistrate’s staff, who were directed to solicit contributions in the autumn” (Will and Wong, 1981:19.)
4. See also Will, “The Control Structure,” in Will and Wong (1981:220–21).
5. On the special tribute granaries at Luoyang and Shanzhou organized during the Kangxi reign, see Will and Wong (1981:32, 301).
6. Food security in the mid-eighteenth century may have consumed 10 percent of annual Qing revenue. As Wong emphasizes, “for a state to spend such sums for this purpose on a regular basis for well over a century is likely unique in the early modern world” (“Qing Granaries and Late Imperial History,” in Will and Wong (1981:477).
7. Unfortunately, contemporary discussion of famine history before 1763 has been contaminated by Hindu-versus-Muslim bickering. See, for example, the apparent anti-Moslem bias in Kaw (1996:59–70).
8. Ch’en (1980:64) cites 1899 as the beginning of the serious penetration of imported textiles into China.
9. For a recent review, see Goo-Park (1997), especially pp. 511 and 516.
10. It should be noted that Latham is notoriously apologetic for British colonialism in India, arguing that the subcontinent’s “relatively low growth overall is due largely to climatic factors, not to any deleterious effect of British colonial policy. See Latham (1996:109).
11. Indonesia in the same period generated almost nine percent of the Dutch national domestic product. See Maddison (1989:647).
12. As Hobsbawm (1968:123) reminds us, “not even the free traders wished to see this gold mine escape from British control.”
13. On long-distance commercial flows, see R. Bin Wong (1982), pp. 768–69.
14. On the crisis in Shaanxi’s granaries, see Wong (1981), p. 78.
15. There were exceptions, of course, as in Gansu in 1810 where “the large sum of one million taels was allotted for a comprehensive and apparently successful effort to reach the stricken population” (Will, 1990:296).
16. “Corruption had always been a way of life in China, but in the nineteenth century it reached unprecedented proportions, not to be exceeded until the first half of the twentieth century” (Lippit, 1980:67).
17. In Jeffrey Williamson’s well-known 1960s study of regional inequality in 24 major countries, the polarization between Brazil’s Northeast and its Center-South was the most extreme. See discussion in Needleman (1968:110–15).

References

- Ackroyd, W.R. (1974) *The Conquest of Famine*. London.
- Arrighi, G. (1994) *The Long Twentieth Century: Money, Power and the Origins of Our Times*. London.

- Bagchi, A. (1992) Land Tax, Property Rights and Peasant Insecurity in Colonial India. *The Journal of Peasant Studies* 20:1.
- Bairoch, P. (1982) The main trends in national economic disparities since the Industrial Revolution. In P. Bairoch (Ed.) *Disparities in Economic Development since the Industrial Revolution*.
- Bairoch, P. (1978) Geographical structure and trade balance of European foreign trade from 1800–1970. *The Journal of European Economic History* 3(3).
- Bairoch, P. (1982) International industrialization levels from 1750–1980. *Journal of European Economic History* XI.
- Baker, C. (1984) *An Indian Rural Economy, 1880–1955: The Tamilnad Countryside*. Bombay.
- Becker, B., and C. Egler (1992) *Brazil: A New Regional Power in the World Economy*. Cambridge, UK.
- Blair (n.d.) *Indian Famines*.
- Bohr, P. (1972) *Famine in China and the Missionary*. Cambridge, MA.
- Buck, J.L. (1937) *Land Utilization in China*. Nanking.
- Burns, B. (1970) *A History of Brazil*. Berkeley.
- Ch'en, J. (1980) *State Economic Policies of the Ch'ing Government, 1840–1895*. New York.
- Charlesworth (1985) *Peasants and Imperial Rule: Agriculture and Agrarian Society in the Bombay Presidency 1850–1935*. Cambridge.
- Chowdhury, B. (1967) Agrarian relations in Bengal, 1859–1885. In N. Sinha (Ed.) *The History of Bengal, 1757–1905*. Calcutta.
- Cressey, G. (1934) *China's Geographic Foundations*. New York.
- da Costa, E.V. (1985) *The Brazilian Empire: Myths and Histories*. Chicago.
- Davis, K. (1951) *Population of India and Pakistan*. Princeton.
- Dean, W. (1986) The Brazilian economy, 1870–1930. In L. Bethall (Ed.) *The Cambridge History of Latin America*. Cambridge.
- Deutsch, R. (1994) "Bridging the Archipelago: Cities and Regional Economies in Brazil, 1870–1920." Unpublished Ph.D. dissertation, Yale University.
- Diamond, J. (1997) *Guns, Germs, and Steel: The Fates of Human Societies*. New York.
- Dodgen, R. (1991) Hydraulic evolution and dynastic decline: the Yellow River conservancy, 1796–1855. *Late Imperial China* 12(2).
- Domros, M., and Peng G. (1988) *The Climate of China*. Berlin.
- Dunstan, H. (1996) *Conflicting Counsels to Confuse the Age: A Documentary Study of Political Economy in Qing China, 1644–1840*. Ann Arbor.
- Dutt, R. (1904) *Open Letters to Lord Curzon*. Calcutta.
- Dyson, T. (1989) The historical demography of Berar, 1881–1980. In T. Dyson (Ed.) *India's Historical Demography: Studies in Famine, Disease and Society*. London.
- Eddy, S. (1911) *India Awakening*. New York.
- Esherick, J. (1987) *The Origins of the Boxer Uprising*. Berkeley.
- Fisher, C. (1978) Planters and peasants: the ecological context of agrarian unrest on the indigo plantations of North Bihar, 1820–1920. In A.H. Dewey (Ed.) *The Imperial Impact: Studies in the Economic History of Africa and India*. London.
- Frank, A.G. (1967) *Capitalism and Underdevelopment in Latin America: Historical Studies of Chile and Brazil*. New York.
- Fritsch, W. (1988) *External Constraints on Economic Policy in Brazil, 1889–1930*. London.
- Galloway, J. (1971) The last years of slavery on the sugar plantations of northeast Brazil. *Hispanic American Historical Review* 51.
- Gamble, S. (1954) *Ting Hsien: A North China Rural Community*. New York.
- Gernet, J. (1996) *A History of Chinese Civilization*. Second edition. Cambridge.
- Goo-Park, Y. (1997) Depression and capital formation: the UK and Germany, 1873–96. *The Journal of European Economic History* 26(3).

- Greenfield, G. (1992) The great drought and elite discourse in imperial Brazil. *Hispanic American Historical Review* 72(3).
- Guha, S. (1985) *The Agrarian Economy of the Bombay Deccan*. Delhi.
- Haber, S. and H. Klein (1997) The economic consequences of Brazilian independence. In S. Haber (Ed.) *How Latin America Fell Behind*. Stanford.
- Hall, A. (1978) *Drought and Irrigation in North-East Brazil*. Cambridge.
- Harnetty, P. (1972) *Imperialism and Free Trade: Lancashire and India in the Mid-Nineteenth Century*. Vancouver.
- Hobsbawm, E. (1968) *Industry and Empire: An Economic History of Britain since 1750*. London.
- Huang, P. (1985) *The Peasant Economy and Social Change in North China*. Stanford.
- Huang, P. (1990) *The Peasant Family and Rural Development in the Yangzi Delta, 1350–1988*. Stanford.
- Kaw, M. (1996) *Famines in Kashmir, 1586–1819: The Policy of the Mughal and Afghan Rulers. The Indian Economic and Social History Review* 33(1).
- Keating, P. (1997) *Two Revolutions: Village Reconstruction and the Cooperative Movement in Northern Shaanxi, 1934–1945*. Stanford.
- Kondker, H. (1986) Famine policies in pre-British India and the question of moral economy. *South Asia* IX(1).
- Kumar, Dharma, Ed. (1983) *The Cambridge Economic History of India, 1757–1970*. Cambridge: Cambridge University Press.
- Kung-Chuan, H. (1960) *Rural China: Imperial Control in the Nineteenth Century*. Seattle.
- Ladurie, E. Le R. (1971) *Times of Feast, Times of Famine: A History of Climate since the Year 1000*. Garden City.
- Lardinois, R. (1985) Famine, epidemics and mortality in South India: a reappraisal of the demographic crisis of 1876–1878. *Economic and Political Weekly* XX(111).
- Latham, A. (1978) *The International Economy and the Undeveloped World, 1865–1914*. London.
- Latham, A. (1996) Asian stagnation: real or relative? In R.C. Aldcroft (Ed.) *Rich Nations—Poor Nations: The Long Run Perspective*. Cheltenham.
- Leff, N. (1982). *Underdevelopment and Development in Brazil*. Volume one. London.
- Leff, N. (1997) Economic development in Brazil, 1822–1923. In S. Harber (Ed.) *How Latin America Fell Behind*. Stanford.
- Levine, R. (1992) *Vale of Tears*. Berkeley.
- Lippit, V. (1980) The development of underdevelopment in China. In P. Huang (Ed.) *The Development of Underdevelopment in China: A Symposium*. White Plains.
- Love, J. (1996) *Crafting the Third World: Theorizing Underdevelopment in Rumania and Brazil*. Stanford.
- Maddison, A. (1989) Dutch income in and from Indonesia, 1700–1938. *Modern Asian Studies* 23(4).
- Maddison, A. (1995) *Monitoring the World Economy, 1820–1992*. Washington DC.
- Maddison, A. (1998) *Chinese Economic Performance in the Long Run*. Paris.
- Mahtur, K., and N. Jayal (1993) *Drought, Policy and Politics*. New Delhi.
- Manchester, A. (1953) *British Preeminence in Brazil: Its Rise and Decline*. Chapel Hill.
- McGuire, J. (1988) The world economy, the colonial state, and the establishment of the Indian National Congress. In Shepperdson (Ed.) *The Indian National Congress and the Political Economy of India, 1885–1985*. Avebury.
- Murray, L. (1985) "New World Food Crops in China: Farms, Food and Families in the Wei River Valley, 1650–1910." Unpublished Ph.D. dissertation, University of Pennsylvania.
- Naquin, S., and E. Rawski (1987) *Chinese Society in the Eighteenth Century*. New Haven.
- Nash, V. (1900) *The Great Famine and its Causes*. London.

- Needleman, L. (1968) Regional inequality and the process of national development: a description of the patterns. In L. Needleman (Ed.) *Regional Analysis: Selected Readings*. Baltimore.
- Nichols, F. (1902) *Through Hidden Shensi*. New York.
- Pang, E. (1981) *PCCLAS Proceedings* 8.
- Parthasarathi, P. (1998) Rethinking wages and competitiveness in eighteenth-century Britain and South India. *Past and Present* 158.
- Perkins, D. (1969) *Agricultural Development in China, 1368–1968*. Chicago.
- Pomeranz, K. "A high standard of living and its implications." E.H.R. Forum: Re-thinking 18th Century China, November 19, 1997.
- Rothermund, D. (1988) *An Economic History of India*. New York.
- Sanjay, S. (1993) The 1837–38 famine in U.P.: Some dimensions of popular action. *The Indian Economic and Social History Review* 30(3).
- Sarkar, S. (1982) *Modern India: 1885–1947*. Delhi.
- Satya, L. (1994) "Cotton and Famine in Berar, 1850–1900." Ph.D. Dissertation, Tufts University.
- Sauvy, A. (1952) *Trois mondes, une planete. L'Ovserveateur* 118.
- Scott, J. (1904) *In Famine Land*. New York.
- Sheel, K. (1989) *Peasant Society and Marxist Intellectuals in China*.
- Singh, N. (1996) *Starvation and Colonialism*.
- Singh, C. (1996) Forests, pastoralists, and agrarian society in Mughal India. In R.G. Arnold (Ed.) *Nature, Culture, Imperialism: Essays on the Environmental History of South Asia*. Delhi.
- Smith, A. (1899) *Village Life in China*. Boston.
- Stein, B. (1998) *A History of India*. London.
- Tomlinson, B. (1993) *The Economy of Modern India, 1860–1970*. Cambridge.
- Walford, C. (1878) The famines of the world: past and present. *Journal of the Statistical Society* 41(13).
- Wang, Y. (1973) *Land Taxation in Imperial China, 1750–1911*. Cambridge.
- Washbrook, D. (1988) Progress and problems: South Asian economic and social history, 1720–1860. *Modern Asian Studies* 22(1).
- Washbrook, D. (1994) The Commercialization of Agriculture in Colonial India. *Modern Asian Studies* 28:1.
- Whetton, P., and I. Rutherford. (1994) Historical ENSO teleconnections in the Eastern Hemisphere. *Climatic Change* 28.
- Wilkinson, E. (1970) *Studies in Chinese Price History*. East Asian Studies. Princeton.
- Will, P.E. (1990) *Bureaucracy and Famine*. Stanford.
- Will, P.E., and R.B. Wong (1981) *Nourish the People: The State Civilian Granary System in China, 1650–1850*. Ann Arbor.
- Williams, R. (1980) *Problems in Materialism and Culture*. London.
- Wittfogel, K. (1957) *Oriental Despotism: A Comparative Study of Total Power*. New Haven.
- Wolpert, S. (1989) *A New History of India*. Oxford.
- Wong, J.W. (1998) *Deadly Dreams: Opium and the Arrow War (1856–1860) in China*. Cambridge.
- Wong, R.B. (1981) The grand structure, 1736–1780. In P.E. Will and R.B. Wong (Eds.) *Nourish the People: The State Civilian Granary System in China, 1650–1850*. Ann Arbor.
- Wong, R.B. (1982) Food riots in the Qing dynasty. *Journal of Asian Studies* XLI(4).