CHAPTER 8
The Origins of Global Inequality

Though the last chapter's exploration of the emergence of property and market-based economic systems was motivated by a desire to explain income inequalities, we considered there mainly what accounts for inequalities within given societies or countries. In this chapter, we'll begin to consider why so much of the world's wealth is concentrated in Europe, in countries such as the United States and Australia (whose populations are predominantly of European descent), and in a handful of other countries, including Japan and some small oil-rich states. Why is so much of the world's poverty found in Asia, in sub-Saharan Africa, and in Latin America and the Caribbean? Why does a world that contains thousands of production lines churning out streams of cars, jet aircraft, refrigerators, pharmaceuticals, and enough food to stock tens of thousands of football-field-sized supermarkets day in and day out also include poverty so acute that it leads to some feeling compelled to sell their children for less money than an American would pay for a haircut? What explains why the rich are concentrated in one set of countries, and the poor in another?

Let's first consider a few reminders about the depth of the gap between the rich and poor countries. We'll then set out on an explanatory journey, a journey through some surprising and unfamiliar terrain that will require the remainder of this chapter and much of the rest to complete.

How the other half live

Early in the morning of June 19, 2000, a customs inspector in Dover, England, heard suspicious noises coming from inside a locked refrigerator truck. Prying its doors open, he discovered that the sounds had been made by two men, both gasping for air and close to death. Upon peering into the airtight compartment, he saw the bodies of other individuals, apparently lifeless. The two survivors turned out to have fifty-eight companions who had already died by suffocation. Almost all were young men who'd been smuggled overland from southern China, hoping to enter England illegally in search of work. As the press was quick to point out, the

victims were merely the most unlucky of tens of thousands of their compatriots seeking to enter Western Europe and North America every month. It proved difficult to find kin to claim their bodies because relatives already in England illegally feared deportation if they came forward.

What might prompt people to take such risks? Conditions for illegal Chinese migrants in the West are no holiday. Most work long hours in menial jobs at low pay, sharing crowded and dirty living spaces. Their illegal status means that they're subjected to indignities, including sexual harassment, with no recourse to external protection. Why would people make the long trek from China to endure such conditions when statistics show that China itself had the world's fastest growing economy during the two decades prior to this incident and has shown no sign of slowing down in the decade since?

One might like to think that the answer has something to do with a craving for freedom, but few, if any, migrants mention this when asked. The fact is that the reasons behind their migration decisions are largely economic. Despite China's high rate of economic growth, an average rural dweller in Fujian, a fast-growing province on China's southeastern coast, still lived on only $89 a month in 2003, according to official statistics. In the southern Chinese province of Guangxi, which borders Vietnam, the corresponding figure was $34. Fifty percent of Chinese rural households lacked running water, and significant numbers also lacked electricity. China's economy has been growing rapidly, but from a very low starting point and very unequally. With average incomes of around an eighth to a tenth of the US level, and with levels of inequality implying that many earn a small fraction of that average, sizeable chunks of its population still live in extreme poverty.

As we saw in Chapter 1, the hundreds of millions of abject poor in China are matched by many other hundreds of millions who can be found spread over almost the entire expanse of nations beyond Europe and North America. Two incidents, occurring nearly simultaneously and just few weeks after the Dover event, help to bring this home.

On July 11, 2000, heavy rains led to the collapse of a large heap of garbage in a municipal dump in Manila. The avalanche of trash buried at least sixty people alive. The dead were members of families that supported themselves by combing the dump for salvageable scraps and food, their dwellings being makeshift shacks on the dump's edges. Television cameras captured macabre footage of neighbors and rescue workers clawing through the rubbish heaps for any who might still be alive.

On the same day as the Manila dump incident, one of a continuing series of explosions occurred alongside a Nigerian oil pipeline. In that incident, 250 villagers who'd been trying to make ends meet by tapping into the line with jerry cans and scooping up the excess from the resulting leaks, were burned to death when the oil caught fire, perhaps due to a spark from some crude equipment.

Terrible as they are, such tragedies, affecting a few dozen of the poor here, a few hundred there, merely hint at the extent of quiet suffering that affects hundreds of millions every day. Attendees of a World Food Summit in 1996 pledged to cut the number of hungry people in half by 2015, but in 2000, the United Nations Food and Agriculture Organization (FAO) concluded that the target could not be reached before 2030. The FAO estimated that 826 million, or about fourteen percent of the world's people, were still malnourished. In a more recent report, *The State of Food Insecurity in the World 2009*, the FAO estimated that 1.02 billion people (about fifteen percent of world population) were undernourished and that the summit target of reducing the numbers of undernourished to no more than 420 million in 2015 would not be reached given recent trends. Such malnutrition weakens the defenses of its victims, especially children, against a variety of infectious diseases, contributing to the deaths of about thirty-two thousand children per day somewhere in the developing world. Severe malnutrition also stunts the growth of the body and causes irreversible harm to intellectual development.

There have been an almost unending series of campaigns and declarations aimed at ending extreme poverty, including the Millennium Development Goals declared by the United Nations and endorsed by 191 member states in 2000. Real progress has been made in some areas, such as reduction of child mortality from infectious diseases. There's also been a noteworthy reduction in the numbers of extreme poor in some countries, particularly fast-growing China and India, which together account for a third of world population. Despite all of this, the sorts of tragedies described above have continued unabated. Another oil pipeline explosion took place in Nigeria's commercial capital, Lagos, in December 2006, killing at least 269. In July of 2006, European officials estimated that some 1,700 would-be immigrants from Africa died trying to make their way in handmade boats to the Canary Islands, which lie sixty miles off the continent's west coast and serve as a gateway to Europe for those lucky enough to reach it. The pressure of rising demand on food prices, and shock waves from an international financial crisis for which they bore no blame, added to the misery of the poor in much of the developing world during 2007–09.

India, like China, has seen considerable economic growth in recent years, but it still holds vast numbers of extreme poor. A third of its 1.2 billion people are estimated to live on less than one dollar a day, another third on less than two dollars a day. Many of the poorest are small-scale farmers struggling to survive by growing crops for which they must purchase chemical fertilizer, pesticides, and seeds produced by agribusinesses, in many cases using money borrowed at exorbitant interest rates from moneylenders. When crops fail and moneylenders can't be repaid, some moneylenders have been known to apply brutal pressure, and some farmers have been known to find their way out by drinking pesticide to take their own lives. Some twenty-five thousand farmer suicides are reported to have occurred between 1997 and 2006.

How did it get this way?

Like most complex problems, there's no agreed answer either to the question of how living standards came to be so lopsidedly distributed around the globe or to that of what, exactly, accounts for *which* countries are rich and which poor.

An oft-mentioned idea is that the rich countries got rich and have stayed that way by exploiting the poor ones. We'll see that there's at least a small element of truth in this. Today, consumers in richer countries enjoy a somewhat higher standard of living because goods made in the developing world are cheap, given that wages there are low. But it's difficult to argue either that low wages in poor countries are a principal cause of the rich countries' wealth or that wages are low in poor countries *because* exporting to rich countries puts downward pressure on them. Those working in export-producing factories are rarely the lowest paid in their countries, and Japan, Hong Kong, Taiwan, and South Korea all saw their wages rise during their decades of export manufacturing, so much so that the jobs in question moved to lower wage economies like China, Vietnam, and Indonesia.

As for the past, estimates suggest that colonies were a net financial drain on those controlling them, and there's little correlation between past colonizing activity and present national wealth. This suggests that colonialism was more about national aggrandizement and geopolitical competition than about extraction of resources, although cases in which colonizers became settlers and took over the lands of prior inhabitants fit the resource-grabbing view from the standpoint of the settlers. In any case, countries that fell to colonization were already less technologically developed and usually had somewhat poorer people than did colonizing countries at the outset of colonization. Since the initial differences

can't themselves be attributed to colonization, one would like to know what put the richer countries ahead in the first place.

Another explanation of who's rich and who's poor is dumb luck. The fellows who came up with the steam engine and other clever devices before anyone else did just happened to be English blokes, this theory would say. They could with equal likelihood have been Iroquois (of present-day New York State) or Tonga (of Zambia) or Tahitians. Once luck had struck where it did and the process had gotten rolling, the technical know-how spread first to neighboring countries, due to proximity and low cultural barriers, and to other countries populated by English speakers, due to shared language. The English and their neighbors and offshoots were simply lucky that the people who devised the steam engine were tea-drinking chaps with good English mums. But this, of course, overlooks the fact that European colonization began centuries before the industrial revolution and that there are important reasons why some were and others weren't really in the running to be the progenitors of modern industry.

A third hypothesis focuses on geography and climate. Countries in temperate latitudes, such as those of Europe, North America, and northeast Asia, may enjoy an advantage due to an invigorating climate, the challenges to human ingenuity posed by that climate, and the check on disease-bearing organisms afforded by annual frosts. Countries with seacoasts and large rivers permitting navigation and the loading and unloading of large ships can more cheaply engage in international trade. Tropical countries bear a greater burden of disease, and landlocked ones have higher transportation costs.

The idea that access to water transport helps to explain economic development is not easy to dismiss given that so much of the world's population and economic activity are located near major rivers and ports. But there are plenty of impoverished countries (Haiti, Guatemala, Mozambique) having ample access to the sea. There are also examples of both early civilizations (Mesopotamia, Egypt) and current centers of economic growth (Singapore, Mumbai) having hot climates, and much of the correlation between temperate climates and current economic development is attributable to historically recent population movements of Europeans to temperate latitudes like those of the United States and Australia.

A fourth possibility—and a scandalously politically incorrect one—is that Europeans, their cousins in south Asia, and perhaps the northeast Asians who joined them in being modern and industrialized during the twentieth century are simply smarter than Africans, Polynesians, and Amerindians (the pre-Columbian

inhabitants of the Americas). Countries populated mainly by the latter groups will never catch up without ongoing charitable assistance, this largely unarticulated view would imply.

But in addition to being distasteful, such ideas are historically unsupportable. The ancestors of today's British, Scandinavians, and Japanese were cultural and technological savages compared with contemporaries in Greece and China twenty-five centuries ago, but not because of any genetic deficit. China and India contained the lion's share of the world's "super-poor" just a generation ago, yet today they include quite a few of its super-rich and many of its most dynamic entrepreneurs and scientists. People of African descent can be found in the top ranks of science, literature, statecraft, and the arts. Conversely, north Africa, the Middle East, and west Asia (including Afghanistan), contain some of the world's least educated and poorest people, who are nevertheless "white."

A ten thousand-year divergence

This chapter and the next will offer a quite different explanation of how the gap between rich and poor countries came about. It allows that exploitation has a part to play in the gap's widening, but instead of focusing on differences in character, genes, or luck, it puts the different historical experiences of the peoples of different regions at the center of its explanation of why some and not others had the upper hand as the world was knit together by exploration, colonization, and trade.[1] Ethnicity plays its part, not because of the innate superiority or inferiority of some groups relative to others, but due to the persistence of features of economic culture transmitted from generation to generation within families. We'll also find that unequal relations among groups tend to solidify and persist from one generation to the next thanks to the sort of in-group/out-group competition, discrimination, and exploitation we encountered in Chapter 5.

The approach to be taken assigns important roles to the process of diffusion of ideas and to the parts played in that process by geography, culture, and language. But unlike the "English blokes" explanation, I'll argue that by the eighteenth century, no informed observer would have expected the world's next major mechanical advances to be coming out of the Iroquois Confederation, and I'll offer an exploration of why that was the case.

This chapter's discussion builds on last chapter's recognition that human societies have gone through dramatic changes in way of life, understanding of nature, and economic culture over the last ten thousand years. The agricultural

and industrial revolutions, in particular, led to marked increases in private rights over property and in the degree to which specialization and trade feature in economic life. Specialization and trade in turn promoted technological advances that increased productivity and population density. Together, private property, specialization, and technological progress caused both greater inequality within societies (a regrettable trend) and higher average living standards for societies as a whole (a desirable one), especially after the industrial revolution.

But the most important point for our present discussion is that these processes didn't occur in all human societies at once. *Differences in the timing of humanity's technological and social revolutions hold the keys to understanding a great deal of global inequality today.*

At the time that Spain, Portugal, the Netherlands, Britain, and France began a more than four century process of exploring and colonizing the non-European world, there were already considerable differences in levels of technological development and in social and political structures in different parts of the world. But differences between the soon-to-be colonizers and other old societies of Eurasia, such as the Ottoman and Chinese empires, were not yet very great. In fact, nearly half of the inhabited world by territory, and well over half by population, exhibited a patchwork of older and younger civilizations with significant urban populations. This band of regions stretched from Western Europe across north Africa, the Middle East, and south Asia to China, Korea, and Japan. In them, laborers in towns and cities, traders, merchants, officials, priests, and soldiers were supported by agricultural surpluses produced by farmers who still constituted the large majority of the population. These societies had been sharing with each other technological, scientific, mathematical, and cultural achievements by virtue of intermittent and occasionally more sustained contacts for more than three thousand years.

When the fifteenth century began, however, the people living in the other half of the world's inhabited area were either partially or totally unaware of the interchange of knowledge among European, Mediterranean, and Asian societies. Areas that had had little or no contact with Eurasian civilization included some in which agrarian civilization had made a largely, or even fully, independent, but chronologically later, start: west Africa, Mexico, and Peru. Other areas outside the Eurasian orbit were as yet untouched by any agricultural revolution, including Australia, New Zealand, portions of the Kalahari Desert, the upper Amazon River basin, and lands in the northernmost latitudes of both the eastern and western hemispheres. Finally,

the half of the world that had had no pre-1500 contact with the civilizations of Eurasia included areas that fell in between with respect to population density and extent of agriculture, including most of North America, southern and eastern parts of South America, the Caribbean, southern Africa, New Guinea, and various Indian and Pacific Ocean islands like those now comprising Hawaii.

Put simply, the main thesis of this chapter is that the differences in accumulated social change that marked different parts of the world on the eve of the European age of exploration and conquest in the fifteenth century determined who got colonized. And colonization and its aftermaths, especially the industrial revolution, contributed to a dramatic magnification of the already existing inequalities.[2]

Let's think once more about the transition from life in hunting and gathering bands to life in settled villages, towns, and cities, this time paying special attention to the fact that not everyone was making the transition at the same time.

The domestication of humans

During their first sixty to a hundred thousand years after attaining fully modern physiognomy, *Homo sapiens* lived rather like other animal species, moving about in pack-like bands and living off the land. During the next ten thousand years, almost everything changed, for most of us. We might go on camping trips to experience again what living off of the land was like. But usually we bring along some critical manufactured items, such as flashlights, thermoses, and tents. Most often, too, we bring along the fruits of our agriculture, rather than hunting for nuts, berries, and squirrels in the wild. When we've had enough of roughing it, we come back *home*. Like well-bread dogs or cattle whose last wild ancestors are distant memories, we human beings living in our cities, towns, and villages are now a domesticated species.

There was little inequality among world regions during the first few thousand years after modern humans began to radiate outwards from Africa to the other continents. Even twenty thousand years ago, people everywhere, whether ancestors of today's British and Swedes or of Nigerian Ibo, Alaskan Inuit, or South American Guarani Indians, used similar tools made of stone, bone, and wood to clear brush, skin animals, and pound plant fibers and seeds into gruels and porridges. When hunters from Siberia made their way into Alaska and then southwards onto the American Plains some thirteen thousand years ago, they were probably quite similarly organized, and they still had many tools in common not

only with closer cousins in Mongolia and Siberia, but also with more distant cousins in Western Europe, Africa, China, and New Guinea.

Unfortunately for what was to follow, however, technological parity hadn't prevented generations of separation from giving rise to differences in language, culture, and physical appearance that would play into "us"/"them" distinctions during contacts to come. Those who crossed into the Americas may have had their last ancestor in common with the ancestors of today's San (Bushmen) more than a hundred thousand years earlier, and periods of separation stretching into the tens of thousands of years stood between the inhabitants of eastern or southern Asia and their counterparts in Australia or Europe. What biologists call "genetic drift" combined with the selection pressures of differences in climate to generate noticeable differences in skin color, eye folds, shape of nose, thickness of lips, and hair color and texture. Languages also followed predictable patterns of drift and change, so groups lacking regular contact for thousands of years inevitably came to speak languages that were mutually unintelligible.[3]

Although differences in language and appearance were not yet matched by differences in level of material culture or technology twenty thousand years ago, the relative similarity that existed in this respect was not to last. By ten thousand years ago, humans in different parts of the world were starting to live quite differently from one another. Along the Tigris and Euphrates rivers in Mesopotamia, along the Nile in Egypt and the Indus in today's Pakistan and India, around China's Yellow River, and a little later in other clusters, perhaps half a million people had settled down to cultivate the soil with rice, millet, barley, and wheat and to raise domesticated pigs, ducks, chickens, goats, and sheep. Within a few thousand years, specialists had begun to record information using writing systems devised for religious and administrative purposes, and towns and cities had come into being. People had mastered ironworking and were using the technique to forge stronger and more precisely shaped weapons and tools. Use of tools of war had become the specialized occupation of soldiers. Trade in goods like iron, silver, copper, gold, salt, timber, and precious stones was being carried on over long distances. And like their crops and animals, the people of these emerging civilizations had become the domesticated creatures they remain today.

It's not easy to say whether the ordinary people of "civilized" regions enjoyed a higher living standard than those in the "uncivilized" areas that lay beyond. Based on the skeletal remains unearthed by archeologists and on comparisons of farming with foraging peoples in modern times, some experts assert that

the farmers in densely populated states probably worked longer hours, consumed fewer calories, and suffered from more diseases (due to living closer to more people and animals) than their hunter-gatherer ancestors and contemporaries. For better or for worse, however, the civilizing process was changing the people it touched in profound ways.

Like the Ache or members of small New Guinea tribes a generation or two ago, foragers before the Neolithic may have divided humanity into the two hundred or so people they recognized and knew and everyone else, who if encountered was assumed to be dangerous and hence was either fled from or killed. Like some San groups in southern Africa, bands may have built up wider networks with other bands that might have helped one another in times of local ecological adversity. But typical interactions remained in the immediate band, and with only a few dozen people living off of a large expanse of land it would be common to see no strangers for months at a time.

In settled agrarian society, by contrast, you might encounter in a short span of time many thousands of people who either dressed like you or like a recognizable class of others (say, soldiers or priests or traders) and whom you could assume to be a member of your society, though they weren't known to you personally. You could assume that they followed well known rules and spoke the same language as you. You could pass them at a market center and, though not knowing them, could know that they were unlikely to attack you because they belonged to a common social order that could be counted on to punish such acts.

Members of agrarian societies were more specialized in their roles and more dependent on a larger number of others than were their hunter-gatherer ancestors and contemporaries. Much of the living world with which they came into contact had been transformed by human action. They surrounded themselves with goats, sheep, pigs, or cattle, planted vegetables in their gardens, and grew fields of grain, but all of these representations of nature were long-since domesticated descendants of once-wild animals and plants, with no living person recalling their ancestry. Compared to their distant descendants of today, these farmers in the eras of Sargon and Hammurabi, of Akhenaten and Ramses the Great, of the Buddha, Confucius, and Aristotle, may have been fairly self-reliant in many matters, but already the typical person depended on some everyday tools and goods that had not been produced by her own household and had instead been made by specialized craftsmen and acquired through trade or passed through a centralized distribution system.

The breaks between settled agriculturalists, pastoralists, and hunter-gatherers were the first deep cracks in the qualitative homogeneity of humankind, foreshadowing the gaps between today's "developed" and "developing" nations. But awareness of the gap was limited because people at opposite ends of the civilization/foraging spectrum rarely met. The first farmers probably still had some contacts with true hunter-gatherers, but as entire regions transitioned to agriculture over dozens of generations, those in the heartland of an agrarian region would have neither memory of nor contact with people like their foraging ancestors, since full agriculturalists and complete foragers would tend to be separated by belts of intervening peoples and lifestyles that shaded gradually from the one to the other. Civilizations knew rumors about strange beings in unknown lands, ones who might have two heads, might eat their children, and so on. The ancient Greeks' beliefs about India, which Alexander the Great took into his foray in that subcontinent, were of this kind. The Hebrews, originally shepherds with evident misgivings about agriculture, vaguely recalled a first man and woman to whom nature presented its bounty without need of tilling the ground—that need being an apparent punishment for past transgression.

Though this romantic Eden-like view would resurface occasionally in figures like Rousseau, by and large when "wild" people were encountered by "civilized" ones in early modern times they were viewed as subhuman. A Dominican missionary who was among the first Spaniards to live in the New World, Bartolomé de Las Casas, had to argue before a panel of leading theologians back in Spain that the native peoples of the Americas were human and had souls, something that settlers intent on simply enslaving the Amerindians vehemently denied. When Charles Darwin, during the famous Voyage of the Beagle a full three centuries later, saw the natives of Tierra del Fuego at the southern tip of South America, he wrote in his journal, "I could not have believed how wide was the difference between savage and civilized man: it is greater than between a wild and domesticated animal, inasmuch as in man there is a greater power of improvement. … These poor wretches were stunted in their growth, their hideous faces bedaubed with white paint, their skins filthy and greasy, their hair entangled, their voices discordant, and their gestures violent. Viewing such men, one can hardly make oneself believe that they are fellow creatures and inhabitants of the same world." And these are the remarks of a gentle and humane man said to have allowed himself to argue with Beagle Captain Robert FitzRoy only over FitzRoy's defense of slavery.

We've already seen how the flip side of cultures, which bind societies together with shared languages, identities, and norms, is the ease with which those not sharing the same one tend to be viewed as "other," as not worthy of those considerations accorded to members of the group itself. If, in the twentieth century, people as ostensibly similar as secularized Jews living among Germans, Bosnian Muslims living among Bosnian Serbs, and Iraqi Shiites living among Iraqi Sunnis could become in their neighbors' eyes vermin to be exterminated or driven from their midst, it should not be surprising—though this makes it no less tragic—that people so culturally distant from the Age of Exploration Spaniards and Portuguese as were the iron and stone age peoples they encountered around the globe could easily come to be treated as less than fully human. Most tragically, the colonizers enjoyed considerable superiority in weaponry and technological knowledge but no countervailing superiority of moral sensitivity, making it easy for them to do as they would with the inhabitants of "backward" lands.

Different timings, different connections, different outcomes

By the late twentieth century, the number of people living exclusively by foraging had shrunk to mere thousands in a world with a population numbering in the billions. They included a small population, perhaps two or three hundred, living an isolated existence on tiny North Sentinel Island, off the coast of India. The islanders made world news for a day when a government helicopter, flying low to inspect for damage following the December 2004 Indian Ocean tsunami, found itself being fired upon by a local defender armed with a bow and arrows. For even a few hunter-gatherers to have survived to this day of helicopters, jet aircraft, and CNN would be truly amazing had the agricultural or industrial revolutions been a rapid and uniform affair. The seemingly incongruous fact of their survival to the present day, even in tiny numbers, is trying to tell us something.

That something is that the human transitions from foraging to settled agriculture and from the latter to urban, industrial society were not events that happened all at once and at the same time everywhere. Instead, they've been works in progress, with the last pockets of land untouched by agriculture and modern economic activities—in the upper Amazon, the rain forests of Borneo, the Kalahari, the Arctic, and tiny North Sentinel Island—only recently coming to feel significant pressure from farmers, ranchers, and foresters.

The first agricultural revolution began about 10,500 years ago in the Near East, and by four thousand years ago, village life had diffused widely, from the

Near East eastward towards Iran, Afghanistan, and the Indus, westward into Egypt, southward to Ethiopia, and northwest through what's now western Turkey, and into Europe. Agriculture and associated changes had similarly diffused from the probably independent sites of domestication in north-central and central China through much of the larger area that is China today, gradually working their way into all of east and southeast Asia. The agricultural clusters of the Indus Valley (today's Pakistan and western India) spread throughout the Indian subcontinent and into Sri Lanka and parts of Indonesia. Since no impenetrable barriers separated the societies of Europe, north Africa, and Asia, crops and animals domesticated in one part eventually made their way to the others—though the Chinese successfully guarded the nature of silk production for centuries, thus fetching high sums for the cloth from admiring Roman emperors. With a few similar exceptions, most inventions, including metallurgical techniques, ways of harnessing horses, writing systems, mathematics, construction methods, and eventually printing and gunpowder, also spread throughout Eurasia and north Africa.

In contrast to this pattern, societies outside of the Eurasian/Mediterranean region had little or no contact either with Eurasia or with one another for thousands of years. In sub-Saharan Africa, new groups of crops appear to have been domesticated about three thousand years ago by people speaking Bantu languages who spread them from west Africa to central, eastern, and southern parts of the continent. In what would come to be called the "New World," an independent agricultural cluster appeared in the Yucatan Peninsula, then spread throughout Mexico and into parts of what is now the US southwest and east, while another cluster arose where Peru and Bolivia exist today and then spread into parts of what are now Colombia, Chile, northwest Argentina, and western Brazil. A fourth agricultural cluster was spread by people speaking Polynesian and Melanesian languages, dispersing among the islands of the Pacific and Indian Oceans with an agricultural economy based on tubers, chickens, and pigs. A fifth independent center of domestication arose in New Guinea, including crops such as tubers and sugarcane.

These non-Eurasian clusters of agricultural diffusion differed from the Eurasian ones in having lacked contact with one another and with Eurasia; so many of their own innovations and those of Eurasia failed to come to one another's attention until European expansion and colonization started connecting the dots on the world map in the fifteenth century. That linking of regions previously separated for more than ten thousand years would cause the New World's maize, potatoes, tomatoes, squashes, and cocoa to reshape food systems in Europe and

Africa. The conquistador, Cortez, was amazed at the scale and geometric layout of the Aztec capital, Tenochtitlan, which was larger than any Spanish city of its day.

Overall, though, the inequalities of development before Columbus favored the much larger and more diverse Old World or Eurasian cluster of civilizations. Their crops, such as rice, soybeans, and wheat, were often more nutritious than the root and tree crops of New Guinea and the Pacific. They had domesticated large animals capable of pulling plows and carrying armed men, and the horses they rode into battle proved especially powerful against the Aztecs and Incas. Their longer history of cross-fertilizing civilizations had produced forms of organizational and technological know-how that made their advances into the world's other regions impossible to resist. The uneven match of technologies and modes of organization in large part explains who were the colonized and who were the colonizers.

Conditions for conquest

In 1492, two civilizations, centered in what are now Mexico and Peru, were surrounded by belts of semiagricultural tribes and beyond them by areas still occupied by foragers. The two belts of civilization had, at their centers, elaborate hierarchies, cities, and control over large expanses of territory. But those empires lacked contact with one another, and neither had been in existence for very long, so fifteenth century Spain's encounter with them might be compared to Spain going into battle against Sargon of Akkad—a powerful figure in 2200 BCE, but one ruling a new empire deprived of the succeeding thirty-seven centuries of technological and organizational progress. Neither indigenous civilization of the Americas had yet developed or heard of steel weapons and armor, nor of gunpowder. Neither had developed the wheel for transportation or the plough for farming, partly because the ancestor of the horse had gone extinct in the Americas, and there were no large beasts of burden. Almost certainly they would long since have obtained all of these things if Mexico and Peru, like Britain or Japan, had had steady sea or land contacts with Eurasia. In that case, Pizarro could hardly have overthrown the vast Inca Empire with only a few dozen mounted soldiers. But the overland route from Asia had long since disappeared, and before Columbus there was no seafaring tradition in either the Pacific or the Atlantic that bridged the distances between the hemispheres.[4]

Sub-Saharan Africa's geographic isolation was less complete. There was some overland trade by Arabs and Berbers from north Africa and some seafaring

trade on both east and west coasts. But there were few places where sub-Saharan and north African cultivators lived in proximity, and differences in climate, soils, and rain patterns made north African crops unsuitable south of the Sahara. West African and Bantu agricultures reached high enough productivities to support populations giving rise to kingdoms in some areas, but these appeared relatively late,[5] were scattered, and left out large parts of the subcontinent that continued to hold less-centralized societies practicing less intensive forms of agriculture, pastoralism, and even foraging. Iron tool-making existed, with significant cities and trade in parts of west Africa, but the more recent technologies to have swept through Eurasia, including steel, gunpowder, and the printing press, were absent when Europe's colonial era began. Larger and more technologically advanced civilizations appear not to have arisen earlier in sub-Saharan Africa, due both to "bio-geographic" obstacles to more intensive forms of agriculture, including fragile soils and the threat posed by the tsetse fly and other diseases to draft animals, and to the usually "thin" nature of contacts with Mediterranean and Asian civilizations, itself partly due to the difficulty of traversing the Sahara.

The world's remaining farming peoples, in New Guinea and various Pacific and Indian Ocean islands, relied on relatively low productivity agricultural systems based on yams and other nongrain crops, and they enjoyed even less contact with Eurasia than did sub-Saharan Africa. Along with peoples of Australia, Tasmania, and parts of New Zealand who remained hunter-gatherers, the horticulturalists of New Guinea and Oceania had no cities, and what state-like political units they had were still rudimentary when European explorers arrived.

One cannot, of course, simply blame differences in technological sophistication for what would transpire after 1492. Africans, Europeans, and natives of the Americas were all human beings who might have worked together to build prosperous societies using the best of the world's technologies and drawing on the richness of all of their cultures. But three aspects of human nature featured in earlier chapters help to explain why this didn't happen. The first is the confluence of self-interest, acquisitiveness, and territoriality. Europeans coveted the silver and gold, the lands, and other resources of the Americas and other regions, so peaceful sharing was not to be. The second is the dark side of social cooperation mentioned above—the ease with which people label the out-group as "other"—a part of human nature that makes it possible for the same people to behave quite cordially with own-group members while subjecting those in an out-group to less than human treatment. The third aspect, working closely with the second,

is the power and persistence of culture, which is nothing short of the societal source of the worldview and mental matrix within which individuals develop and operate. The tenacity of cultures is well illustrated by situations in which people of different origins—for instance Jews and Slavic-speakers in Eastern Europe, Tamils and Sinhalese in Sri Lanka, or Hmong and majority Lao in Laos—have lived side by side for centuries but retained separate identities, often incorporated into relations of exploiting and being exploited. That same tenacity has permitted Amerindians and Spaniards to live as near neighbors in places like Guatemala, Peru, and Bolivia for centuries, while still maintaining distinct identities. Such persistent ethnic cleavages, the rule rather than the exception in any number of other cases, help to explain why technologies and ideas often failed to pass from one people to another even after contacts occurred, which in turn explains why inequalities of development that need not have persisted nevertheless continued to reproduce themselves from one generation to the next.

The colonial era

The beginning of the end of the separation of the human worlds of Eurasia and those of sub-Saharan Africa, the Americas, New Guinea, Australia, and the Pacific, came when Europeans mastered the compass and improved ship designs and took to the oceans. Between the early fifteenth century, when Europeans began claiming relatively nearby Atlantic islands like the Canaries, Azores, and Cape Verde, and the end of World War I, when remnants of the Ottoman Empire, including Syria and Palestine, fell into French and British hands, European colonizers took over the large majority of the territory and population of the other continents, including parts of Eurasia itself. This colonization of most of the world by Europeans began as a conquest by "more developed" agrarian civilizations (after 1800, industrial ones) of "less developed" foragers, pastoralists, and simple agricultural societies. Then, after the colonizers achieved an even greater advantage over the rest of the world's societies, even some relatively advanced agrarian societies fell to them. Furthermore, even countries that Europeans didn't directly conquer, such as Turkey, Japan, and China, eventually found themselves to be in a new world due to the impact of European expansion, the ability of the colonial powers to control navigation routes, and the emerging technological superiority of the Europeans over the rest of Eurasia. (Why Europeans, not Ottomans, Arabs, Persians, Indians, or Chinese, were the ones to break out into world conquest and then industrialization will be addressed later.)

Just how European powers bulldozed their way over the globe varied from place to place. But the general contours of that variation are surprisingly easy to predict if a few key factors are considered.

The first factor is position on the foraging to intensive agriculture continuum and the differences in population density and political organization that go along with it. Less populous regions, which lacked large-scale states, were the most easily conquered and, where climatically suitable, were eventually settled by Europeans. The second key factor is disease. Indigenous susceptibility to European diseases (for instance, lack of immunity to smallpox in the Americas) lowered native population densities following contact and created more room for settlers. European susceptibility to native diseases kept Europeans out of the interior of Africa until medical developments mitigated the problem. The third factor is climate: climates that Europeans found attractive, when coupled with low indigenous population densities and lesser suitability for plantation crops, attracted settlers who crossed the ocean, bringing their crops from home. In contrast, in hotter climates suitable for plantation crops like sugar, the colonizers brought in non-European slave and indentured laborers, with small numbers of European settlers managing production and collecting the profits; Haiti and Jamaica offer examples. Finally, geographic remoteness caused some places, such as Australia, to remain unknown to Europeans a little longer and to be settled later and more slowly.[6]

Consider a few typical patterns, beginning with what are sometimes called the "lands of recent settlement," "neo-Europes," or "European offshoots." Europeans settled in large numbers in what are now the United States, Canada, Argentina, Australia, and New Zealand because they found those territories to be occupied mainly by people living foraging lifestyles or practicing relatively low-intensity forms of settled agriculture. Such peoples tended to have relatively small populations, and they lacked organized states and were poorly armed, by European standards. People wielding bows, arrows, spears, and boomerangs, lacking gunpowder, steel, horses, and governments, could not fight off the inheritors of the accumulated technological and organizational know-how of Mesopotamia, Egypt, China, India, Persia, Greece, Rome, Christian Europe, and the Islamic Near East.[7] Where indigenous peoples had been "thin on the ground" or were rendered so by diseases to which they lacked immunity, new countries emerged that were peopled primarily by transplanted Europeans and others whom they brought in to work for them.

The rest of the western hemisphere falls largely into one of two patterns. In the islands of the Caribbean (including Cuba, Hispañola, and Jamaica) and on the northeast coast of South America (for instance, Guyana), Europeans found incipient agriculturalists with relatively low population densities and without states. They quickly subjugated them, saw most of the island people die from disease and overwork, and then they populated their territories mainly with African slaves, with varying numbers of Amerindians from inland areas, Europeans, and laborers from India and other parts of Asia added to the mix. The Caribbean region experienced a different fate than the "neo-Europes" (North America, Australia, and New Zealand) because its climate made it attractive for growing on plantations what were then high-valued export crops—especially sugarcane—by using enslaved and indentured labor. Some areas that eventually became countries included aspects of both the "neo-Europe" and the "Caribbean plantation" models: the United States (with its southern plantations) and Brazil (with its northeastern ones) being leading examples.[8]

The other major pattern observed in the Americas is the one into which Mexico, Central America, and most of the Andean region of South America, including Peru, Bolivia, and Ecuador, fall. These areas had been homes to civilizations that had begun independently, but as late as six thousand years after the first agricultural revolution in the Fertile Crescent. Their progress in developing agriculture and civilizations was impressively rapid, if we consider that their ancestors may have reached these territories for the first time only about eight thousand years earlier, whereas modern humans may have lived in Mesopotamia for sixty thousand years or more before domesticating that region's wild plants and animals. But being *relatively* quick innovators wasn't good enough because the six-thousand-year head start enjoyed by Eurasia, and the geographic breadth and diffusion of technologies among its various civilizations, made it easy for Europeans to subjugate Native Americans. Compared to the more northerly and southerly parts of the hemisphere, however, these more densely populated parts of the Americas evolved differently after their conquest. This is because their indigenous populations were large enough that even after substantial mortality from disease, the successor societies remained majority indigenous in make-up, and aspects of their pre-Colombian cultures and languages survived the encounter.

In some of the American lands in which indigenous people remained numerous, settler and native groups remained largely separated. Colonists tried to establish Iberian-style societies with the help of indigenous labor, but large numbers of

indigenous people lived apart, impoverished and with little benefit of education or engagement with international trends. These countries' societies remain poorly integrated after hundreds of years, with ethnicity, social class, and wealth remaining linked, and with early patterns of inequality being maintained even as lines of ethnic distinction begin to blur. In places like Guatemala and Peru, uneasy mixes of class and ethnicity have made political and social stability elusive right up to the late twentieth century, when struggles between guerilla armies and landowner-backed death squads, and often intertwined conflicts between national armies and drug lord mini-states, have reflected the old cleavages. One of Washington's recent political headaches, the crop of populist leaders that includes Venezuela's Hugo Chavez and Bolivia's Evo Morales, can be traced directly to the manner in which European and indigenous populations have interacted for centuries. Chavez, of mixed Amerindian, African, and Spanish descent, was raised in a thatched palm leaf house, while Morales, of the indigenous Aymara people, grew up herding llamas in Bolivia's Andean highlands.

One of the most startling pieces of evidence for the persistence of cultures and of cultural differences is the fact that, viewing the two American continents from Arctic north to Antarctic south, there remains a strong correlation between the ethnic origins of countries' populations and their levels of economic modernization and standards of living. The two richest countries, the United States and Canada, have only two to three percent of their populations descended from Amerindians, and relatively high-income Latin American countries like Argentina, Uruguay, and Chile also have low proportions of indigenous descendants. This contrasts with some of the poorest countries, including Bolivia, Guatemala, Ecuador, and Peru, which are all around two-thirds indigenous by origin. Mexico, where indigenous ancestors also have about a two-thirds share, is closer in its income to Argentina and Chile than to Bolivia and Peru, perhaps partly because its indigenous and European people are more fully intermixed—less than thirty percent of today's Mexicans are classified as Amerindian rather than mestizo, versus fifty-five percent in Bolivia and forty-five percent in Peru. Elsewhere, high representation of people descended from Africans brought to the hemisphere as slaves is also associated with low income: the hemisphere's poorest country, Haiti, is around ninety-seven percent African by descent, and Jamaica, whose average income resembles Guatemala and Ecuador at about four thousand dollars, is eighty-nine percent African-descended. As will be discussed more in the next chapter, the industrial technologies, organizational arrangements,

and outlooks that spread easily to the United States and Canada from England and other European countries in the nineteenth century were clearly far less easily absorbed by these majority indigenous and majority ex-slave societies.

Austronesians and Papuans

In the Indian and Pacific Oceans, economies based on horticultural production of yams and other crops, on the raising of pigs, and on fishing had existed for several hundred to a few thousand years on islands populated by speakers of the Austronesian language family, which includes Polynesian and Melanesian languages. Although most developed moderately hierarchical social and political structures in which chiefs exercised considerable power, total populations were small, and neither cities nor high degrees of economic specialization emerged before the colonial era. Those living farthest from mainland Asia had almost no contact with other civilizations. Their long voyages across oceans that the great Asian civilizations rarely ventured far into were, to a large degree, one-way trips by fearless risk-takers.

The Austronesians' arrival in places like Hawaii, New Zealand, and Easter Island occurred not only after the apogees of the ancient Mesopotamian and Egyptian civilizations but even after the Roman Empire had risen and fallen. The carrying capacities of their islands are unlikely to have supported populations of sufficient scale to generate large amounts of technological innovation under preindustrial conditions, even if their agricultural bases had been more productive.[9] For these reasons, when discovered by expanding European empires, they lacked the whole panoply of Eurasian technologies, including grain crops, horses, cattle, ploughs, steel, and writing, and their island territories were easily conquered by Europeans.

Colonial rule had differing effects in different parts of Polynesia and Melanesia. In some cases, as in Hawaii and Fiji, colonial rule was associated with the adding of significant populations of Europeans and/or Asians to the indigenous one. After nine decades of British rule, for example, Fiji became an independent nation with an indigenous Melanesian majority, but with forty-one percent of its population being descended from Indians who came as laborers on colonial sugar plantations and another four percent being of other ethnic origin, mainly European and Chinese. Hawaii became a US state in which people of Asian origin, led by Japanese and Filipinos, account for more than forty percent of the population, and those of European descent (twenty-four percent) outnumbered descendants of the

indigenous population (seven percent) and other Pacific Islanders (three percent). In other cases, such as Samoa, the local population was largely left alone except for a layer of foreign administrators, missionaries, and teachers. Thanks to relative ethnic homogeneity and absence of exclusive religious doctrines hostile to foreign influences, many of the smaller islands have exhibited relatively peaceful, gradual adoption of elements of Western-dominated culture and institutions. But economic modernization poses challenges due to small size, high transportation costs, and the distance still to be travelled in educating populations to the point of competitive participation in less scale-sensitive high technology sectors.

New Guinea, an island considerably larger than these others that rests on the same continental shelf as Australia, is today divided into an independent country, to the east, and a province of Indonesia, to the west. When Europeans encountered it, they found inhabitants related to the Austronesian populations of neighboring islands living in its low-lying coastal areas and relying on activities similar to the Austronesians for their subsistence. Europeans remained unaware, for four centuries after their first landings on the island, that the frequently cloud-shrouded and mountainous interior of New Guinea hosted a substantially larger population made up of genetically distinct peoples speaking an unrelated family of languages now commonly classified as "Papuan." The highlanders' numbers had grown relatively large through the long practice of an indigenous form of agriculture based on the cultivation of root crops, bananas, and sugarcane and on extraction of starches from sago palms. Despite evidence that Papuans—believed to have arrived in the region tens of thousands of years earlier than the Austronesians—developed agriculture almost as early as did the peoples of Mesopotamia, they were still living in small villages with little economic specialization when the Europeans discovered them in the early twentieth century.

Why didn't the long practice of agriculture produce an urban, state-level civilization in New Guinea as it had in Mesopotamia and China? One possibility is that the absence of protein-rich, storable grain crops conducive to the accumulation of surpluses prevented the rise of specialists in nonagricultural occupations. The island's rugged topography, an almost polar opposite from the river valleys that gave rise to the ancient civilizations of Eurasia, may also help to explain why no integrating culture or political structure came to unite its people. Instead, largely self-sufficient and often mutually hostile groups lived in separated valley clusters, speaking roughly 750 different, and in many cases mutually unintelligible, languages. Topographical barriers were a major reason why the Europeans

who laid claim to the island in the nineteenth century were unaware until the 1930s that a million or more people lived in the highlands they'd supposed to be essentially unpopulated. Like the Austronesians and the indigenous peoples of the Americas, New Guinea's highland farmers were completely isolated from the diffusion of ideas taking place millennium after millennium among the civilizations of the Eurasian landmass.

As with others in similar technological and political situations, New Guineans were dragged into the modern world under terms dictated by the Western powers, which found ways to exploit the island's mineral resources and potential for export crops without building large settlements of their own. Emergence of the current state configuration is explained by European, not native, machinations: the Dutch controlled the western half of the island, so it passed into the hands of Indonesia upon the latter's independence, while the eastern half, at first split between the British and Germans, became a British and Australian protectorate before attaining full independent late in the era of decolonization, in 1975.

Sub-Saharan Africa

As we've seen, crops indigenously domesticated in west Africa reached most of Africa south of the Sahara by the early part of the first millennium, as people speaking languages of the Bantu family migrated to the east and south. Still other agricultural traditions emerged to the north in Ethiopia, Sudan, and Mali. But as with their Amerindian counterparts, agricultural practices spread through Africa mainly well after the growth of agrarian societies in Mesopotamia, Egypt, and China. Perhaps more important for African development than this later start was the fact that intensification of agriculture was inhibited by climate, soils, and diseases. Even today, the continent lags behind most of the world in agricultural production, due partly to problematic soils and climate. By the early second millennium, many small, and a few larger, kingdoms existed, but due to relatively unproductive agricultures and to diseases limiting cattle-keeping, population densities were generally substantially lower than those in Europe and Asia. In 1500, there were about 38 million sub-Saharan Africans, as compared to 248 million, or 6.5 times as many, Asians, with Asia having almost three times Africa's population density. Today, Asia still has five times Africa's population, despite African population growth rates that have exceeded Asia's for decades.

Although the barrier of the Sahara and of the unsuitability of Eurasian crops to sub-Saharan seasonal patterns and soils are rightly pointed to by Jared

Diamond,[10] contacts with ancient Egypt and Arabia and with later Arab civilizations, via both the Sahara and the east African coast, offered to Africa vastly more opportunities to acquire Eurasian technologies than had been the case for the Americas, the New Guinea highlands, or Australia. Due to the relative technological and political underdevelopment of Africa south of the Sahel zone (the lands at the southern edge of the Sahara) and Ethiopia, however, Arabs, and later Europeans, treated the subcontinent more as a source of slaves than as a partner for trade or political contacts. Thus, there was little exchange of ideas beyond the spread of Islam in the Sahel and Swahili coast, and most technological progress south of the Sahara in the millennia before the colonial era came instead from the unrelated southward migrations of the iron-using Bantu-speakers.

As a result of all of these factors, sub-Saharan Africans at the time of European expansion resembled Amerindians, Austronesians, and New Guineans in that they engaged in agriculture but made almost no use of ploughs, wheeled vehicles, or horses. Given its relative technological inferiority and the absence of states strong enough to organize resistance, in most regions, sub-Saharan Africa might be expected to have been an easy target for Europe's colonial expansion. Colonization was indeed what happened in the southernmost part of the continent after its coastline became a staging point for Portuguese and Dutch voyages to the Indian Ocean. Those who came ashore noted the hospitable Mediterranean-like climate, found the land to be suitable for a European-style agriculture, and judged the indigenous population to be thin on the ground. After beginning settlement there and conquering a succession of islands and coastal trading points elsewhere in Africa, however, Europeans didn't penetrate most of the continent's interior because its tropical climate and diseases, especially malaria, made it too inhospitable for settlement or even for the long-term posting of soldiers and administrators. It was also clear that Africa was not an empty continent that could be developed by Europeans without first expropriating large numbers of existing inhabitants.

Several factors worked together to change Europe's relative disinterest in Africa in the late nineteenth century. One was the development of quinine for the prevention and treatment of malaria—an outgrowth of colonization in its own right, since the usefulness of the bark from which it was extracted was only discovered by Europeans after its long use by the indigenous people of Peru. Another was an increase in the military superiority of Europeans over Africans, thanks to more accurate and powerful guns and the eventual inclusion of motorized transport

and machine guns in their arsenals. Third was the competition for spheres of influence between Britain and France and the sudden interest of Belgium and Germany in joining the club of colonizers. With Africa's interior rendered more penetrable, concerns that the continent would be grabbed by competing countries if not by themselves led West European governments to rush into a "scramble for Africa" in the 1890s.

Africa's colonial period was a short one, and its demographic effects were much less far-reaching than those in the Americas, Australia, and New Zealand. Colonization's impact on African societies was as much the result of the intensification of economic and political contacts with outsiders and the drawing of Africa into "the modern world" more generally than of colonial status per se, and this impact continued in the era of independent states that were in essence also colonial creations. Independent African countries were poorly prepared to participate in international markets on advantageous terms, and their governments were extremely fragile and easily subject to capture by military officers, corrupt politicians, and movements pitting tribe against tribe. Since the 1960s, civil wars based on ethnic divisions and the attempts of local groups to control mineral resources have devastated many countries, almost a direct result of the fact that the national borders drawn around peoples lacking common precolonial languages and ethnic identities had only two or three generations to incubate national identities, a far cry from the centuries that the nation-forming process had taken in countries like France, England, China, and Japan.

The colonial era in Asia and north Africa

This brings us to those parts of Eurasia that were not busy colonizing the rest of the world in the fifteenth to nineteenth centuries, that is to Asia, the vast continent containing more than half of the world's population, to north Africa, long part of the Mediterranean world and in 1400 either within or under the influence of the Ottoman Empire, and to that empire itself. What happened to these homes of early civilizations when the world became a European stage?

Not much, in the beginning. Although Portuguese explorers succeeded in navigating around Africa's southern tip, reaching India in 1498 and China in 1513, the European powers were unable to conquer any major part of Asia for more than two centuries, and in several cases, they were successfully repulsed. For example, the Portuguese seized Muscat, in the Persian Gulf, in 1508, but they were driven from it in 1650 by the Sultan of Oman, who also took back from

them his possessions in Zanzibar. Starting in the 1620s, the Dutch and Spanish controlled Taiwan, which at the time was only a lightly settled island divided between a small population of Chinese from the mainland and the members of aboriginal Malayo-Polynesian tribes. But the Europeans were driven out by a Chinese general in 1661. The Portuguese, Dutch, and English established trading posts and forts along the coast of India, but when the East India Company attempted to impose trade on the Mughal emperor in the late 1680s, their effort ended in failure. Japan famously and successfully refused to open its territory to trade with Western countries until effective threats could be brought to bear in the mid-nineteenth century, and formal European trading concessions were not granted by China until about the same time. While Arab and Muslim traders of the Persian Gulf and Malaysia suffered from increasing European domination of their trading routes, the major empires of Asia remained intact and still wealthy centuries after the Aztecs and Incas had fallen to Spain.

In north Africa and the Middle East, the Ottoman Empire also remained a powerful presence well into the eighteenth century, with only Egypt falling partly under European influence in the nineteenth. Persia also would remain an independent power throughout Europe's colonial period. These facts fit in well with our understanding of European colonization as the overwhelming of technologically less-advanced peoples by more-advanced Eurasian powers using tools in a sense acquired through the combined contributions of the whole array of Eurasian civilizations. While easily achieving dominance over non-Eurasians, the north Atlantic powers were still more or less evenly matched with other Eurasian societies at the time that they embarked on their overseas expansion, and accordingly they were unable to dominate those societies with anything like the ease with which they crushed the Aztecs and Incas, seized the lands of tribal and band-type societies in the rest of the Americas, Australia, and Oceania, and ultimately did the same south of the Sahara.

However, by the end of the eighteenth and the beginning of the nineteenth centuries, Europe's colonial successes, the build-up of its capital, markets, and sources of raw materials, and the technological progress spurred by military and naval competition among rival powers, had led to changes in the relative levels of technology, prosperity, and military might that put the Asian-based empires at a growing disadvantage, thereby rendering them susceptible to European conquest or bullying. Even then, it was generally the less unified (India) or less advanced (Malaysia, Vietnam) parts of Asia that were colonized. Turkey, Iran, China, Korea,

and Japan never became European colonies. One Asian country—Japan—even succeeded in industrializing and becoming a colonizing power in its own right before the age of colonization was over.

Why Europe?

Why was it Europe, among the several Eurasian regions that shared the fruits of ten thousand years of agriculture and civilization, that ventured out to locate and map the remaining continents, to rule vast areas, to plant demographic shoots that became the majority populations in large parts of the Americas and Oceania, and to build a huge technological lead by launching the first industrial revolution?

The traditional story has it that Europe's outward expansion was motivated, more than anything else, by the desire to find trade routes to "the Indies," the sources of coveted spices and other goods. During Europe's early colonizing spree in the fifteenth to seventeenth centuries, the Mughal Empire in today's Pakistan and India, Ming Dynasty China, and the Ottoman Empire were the world's wealthiest states, but they showed no interest in far off lands. In a way, it was Europe's sense of inferiority, as well as the shifting political geography that saw the Mongols in the thirteenth and the Ottomans in the fifteenth and sixteenth centuries controlling the land routes from the Mediterranean to India and China, that led Europeans to break out into the Atlantic and then into the seas beyond.

An idea advanced by several scholars, including the medical researcher, scientific polyglot, and geographer, Jared Diamond, and the economic historian, David Landes, is that, contrary to intuition, Europe's political fragmentation was a decisive *asset*. They begin with the fact that China's Ming Dynasty Emperor Yongle sent a fleet of hundreds of ships, some of them among the largest masted wooden ships ever built, into the Indian Ocean between 1405 and 1433. Scholars who've studied the episode believe that Chinese ships visited and could easily have colonized much of what is now Indonesia, Malaysia, and East Africa, doing all this a half century before Portuguese sailors arrived there. But the emperor who succeeded Yongle decided to mothball this navy and to maintain his country's more traditional inward orientation. After all, for two thousand years Chinese dynasties had faced existential threats only from the nomadic tribes to China's north and west, never from the sea to its east and south.

Diamond and Landes contrast the position of the Chinese admiral who commanded the fleet just described, Zheng He, to that of European adventurers

like Columbus who could knock on the doors of several European royal courts and, despite rejections, still find one monarch or another willing to support their ventures. Once the process started, competition between monarchies sharing no common overlord helped to drive it forward. European monarchs also exercised less total power in their own domains than did their Asian counterparts, which left greater independence and room for maneuvering to religious orders and to merchants operating in the region's cities and ports. Ironically, the relative *poverty* of Europe's late Medieval and early modern monarchs in comparison to the Ottoman, Mughal, and Ming courts may help to explain why it was the European rather than the Asian countries that began colonizing new lands in the fifteenth and ultimately gained world dominance in the nineteenth and twentieth centuries.

Exploration and colonization of other continents by Europe's Atlantic-facing nations almost certainly helps to explain why the industrial revolution occurred in northwestern Europe. The wealth generated by colonies created capital for investment, while the expanding international trade increased demand for European goods. Inexpensive raw materials were found, and the opportunities for outmigration helped to prevent wages from falling, contributing to the demand for manufactured goods and to the incentive to mechanize.

Agricultural revolutions, human evolution

This chapter began to sketch an explanation of why the world's regions exhibit such enormous differences in incomes. I've emphasized the already substantial differences in levels of technology and organization that existed on the eve of the era of European colonization and the implications of those differences for how the colonial era unfolded. I attributed differences around the year 1500 to differences in the timing and progress of the agricultural revolution in different parts of the world. As for *why* agricultural revolutions occurred at different times and progressed to different levels in different areas, I noted that soil, climate, and disease conditions were more propitious than elsewhere in Europe and Asia, and that the contiguity of the Eurasian landmass and periodic contacts among its many civilizations allowed for a build-up of technological and organizational capabilities that other regions lacked opportunities to learn from.

In his masterful and influential book, *Guns, Germs and Steel*, Jared Diamond provides other reasons for Eurasia's agricultural head start, as well. He argues that potentially domesticable animals were either nonexistent or went extinct too soon in places like the Americas and Australia, partly because humans had not evolved

alongside the large animal species native to those areas, which made it easier for people to hunt them to extinction. He also asserts that naturally occurring large-seeded grasses capable of being bred into nutritious grain crops were more abundant in Eurasia, and agricultural diffusion was aided there by the existence of adjacent regions having similar latitude and thus growing conditions, whereas it was harmed by large changes in latitude and natural barriers (jungle, desert) in the Americas and Africa.

Since I lack expertise on some of the issues involved, for instance whether it's easy, difficult, or impossible to domesticate a zebra, I haven't commented on them. What's most important for my own purposes has been that agricultural revolutions occurred at different times and fostered different degrees of change in different regions of the world.

The approach I've taken in this chapter has been an evolutionary one in that it's emphasized incremental changes over long periods of time along with geographic variation in the transition from foraging to farming, an important step in human social evolution. There are also links to the evolutionary view of human nature on which I focused in Chapter 5, including the role that self-interest and territoriality played in the emergence of property- and market-based economic systems. Another link is the strong role of kinship, which featured in Chapter 7's explanation of family-based farming and herding economies, and which plays a central role in the transmission and resulting continuity of culture within groups as well as the barriers to the sharing of ideas between them. The hostility to out-groups that forms the "flip side" of within-group solidarity also plays an important part in explaining the unfortunate manner in which the clash between different societies has played out over the centuries of colonialism.

Finally, the evolutionary principle of continuity contributed importantly if so far mostly implicitly to explaining the opening of global gaps in development. To anticipate a theme of Chapter 9, just as reptiles retain organizational features of earlier vertebrates, mammals features of reptiles, and humans features of earlier primates, and just as the evolutionary process from fish to human involved a path of many steps rather than a single enormous leap, so changes in technology and social organization have tended to build upon and to preserve past features and to proceed in a step-like fashion. Property rights and markets were already present in the classical and medieval worlds and were built upon to develop modern economic institutions, and transitions from foraging to horticulture to intensive agriculture to industrial society display a step-like property.

The upshot, as we're about to see in more detail, is that while the people on any branch of the human family tree are undoubtedly as capable of mastering the same organizational tools and technologies as are those in today's most modern economies, getting from one social, technological, and economic state to another displays properties of continuity that make it difficult to skip transitional stages. We'll see that the people of societies with long-standing economic and cultural features of literacy, currency use, states, cities, and market economies have more easily transitioned into the institutions of industrial society than has so far proven to be the case for the foragers, herders, or horticulturalists who were less far along on this evolutionary progression when the industrial revolution began. And with the advantage of this perspective, we'll be able to obtain a better understanding of how and why the modest income differences of Columbus's day ballooned into the much larger global income gaps of today.

Notes:

1. Diminished attention to differences in character and genes here is not inconsistent with my greater attention to them in Chapters 5–7. I contend that such differences are important *within* any given population, but there may be no systematic differences in average character or average genetic predisposition (for intelligence, hard work, etc.) when we compare any two groups to each other.
2. Readers familiar with Jared Diamond's *Guns, Germs and Steel: The Fates of Human Societies* (New York: W.W. Norton, 1999) will recognize the similarity of my approach to Diamond's. Based on my own prior exposure to some of the strands of material on which he constructed his history, I had been working on related, but far more modest, research before the appearance of that book. Diamond's discussion is wide-ranging and masterful, and I've been a strong booster of the book since encountering it. The main differences in my treatment versus Diamond's are that I have very little to say about the "biogeographic" causes of unequal early technological and social development on which Diamond focuses, and I have much more to say about the impacts of unequal development prior to 1500 on social and economic history leading up to the present day.
3. Readers interested in the spread of human population around the world may consult Luigi Luca Cavalli-Sforza and Francesco Cavalli-Sforza, *The Great Human Diasporas: The History of Diversity and Evolution* (Reading, MA: Addison-Wesley, 1995) and Stephen Oppenheimer, *Out of Eden: The Peopling of the World* (London: Constable and Robinson, 2003). A fascinating presentation of Oppenheimer's reconstruction of the process titled "Journey of Mankind: The Peopling of the World" appears at http//:www.bradshawfoundation.com. On the branching and evolution of languages, John McWhorter's *The Power of Babel: A Natural History of Language* (New York: Times Books, 2001) is a good bet (or for those like me with more spare time for audio learning, McWhorter's superb Teaching Company course *The Story of Human Language*).
4. Polynesian mariners did spread eastward across the Pacific, with landings in the Americas impossible to rule out, but their long distance voyages were generally in one direction only, and they themselves lacked contact with core Eurasian technologies.
5. The Ghana kingdom of Mali and Kanem-Bornu in Chad arose about 1,200 years ago, the Zimbabwe kingdom about 900 years ago, and the Kongo kingdom in Angola and Congo about 700 years ago. Their dates of origin are therefore more like those of the Mexican and Peruvian civilizations than like the civilizations of ancient Egypt, Iraq, and China, which arose some 2,500 to 3,000 years earlier.
6. One can test for the simultaneous impact of most of these factors using multivariate regression analysis. In a study of this type titled "Determinants and Economic Consequences of Colonization: A Global Analysis" (2007, unpublished), Arhan Ertan and I found that both *which* non-European countries were left uncolonized, and the *date of colonization* of the others, are well predicted by (a) a measure of early development of agriculture or states or population density, (b) navigation distance (prior to the Panama and Suez canals) from northwest Europe, (c) whether the country is landlocked, and (d) ecological conditions associated with malaria. We

also confirmed that a non-European country's distance from the equator, a proxy for temperate climate, is a positive predictor of the number of European settlers.

7. Recent revisionist scholarship, some of it summarized in Charles Mann's *1491: New Revelations of the Americas Before Columbus* (New York: Knopf, 2005), argues for greater antiquity, greater technological sophistication, and greater populations in the Americas before Columbus. Maize-based agriculture had, for instance, led to substantial settled populations in parts of the present-day United States, including much of the eastern seaboard. Mann even argues that bows and arrows used with sufficient skill by Native Americans were a real match for the muskets of English colonists. But none of this fundamentally changes the conclusion that, especially after the reduction of their numbers by disease, the Amerindians could not possibly have staved off encroachment by the better-armed Europeans.
8. This notion and other ideas in this paragraph are discussed in: Kenneth Sokoloff and Stanley Engermann, "Institutions, Factor Endowments, and Paths of Development in the New World," *Journal of Economic Perspectives* 14, no. 3 (2000): 217-232.
9. A key element of theories of long-run economic development is that the rate of technological change is partly determined by the number of people in communication with one another. The idea is that important innovations are associated with rare "geniuses" likely to be found with the same frequency in any population. If only one in a hundred thousand people has such genius, then a society of only fifty thousand will on average know only one such genius every two generations, but a society of ten million will have about a hundred at any given time. With relatively frequent contact among populations, innovations can cross-fertilize one another. For this reason, a much higher rate of technological development would have been expected in a set of interacting Eurasian societies with combined populations in the hundreds of millions than in an isolated island society with far fewer people.
10. See again his *Guns, Germs and Steel* (1999).