

ENVIRONMENTALISM AND EUROCENTRISM. By: Blaut, James M., Geographical Review, 00167428, Jul99, Vol. 89, Issue 3

"Environment molds history," writes Jared Diamond in *Guns, Germs, and Steel* (p. 352). Everything important that has happened to humans since the Paleolithic era is due to environmental influences. More precisely, all of the important differences between human societies, all of the differences that led some societies to prosper and progress and others to fail, are due to the nature of each society's local environment and to its geographical location. History as a whole reflects these environmental differences and forces. Culture is largely irrelevant; the environment explains all of the main tendencies of history. Diamond proceeds systematically through the main phases of history in all parts of the world and tries to show, with detailed arguments, how each phase, in each major region, is explainable largely by environmental forces. The final outcome of these environmentally caused processes is the rise and dominance of Europe.

The essential argument is very clear and simple. Almost all of history after the Ice Ages happened in the temperate midlatitudes of Eurasia. The natural environment of this large region is better for human progress than are the tropical environments of the world, and the other temperate (or midlatitude) regions--South Africa, Australia, and midlatitude North and South America--could not be central for human progress because they are much smaller than Eurasia and are isolated from it and from each other. Although many civilizations arose and flourished in temperate Eurasia, only two were ultimately crucial, because of their especially favorable environments: China and Europe. Finally, some 500 years ago China's environment proved inferior to Europe's in crucial ways. Europe therefore triumphed.

Diamond distinguishes between the "ultimate factors" that explain "the broadest patterns of history" and the "proximate factors," which are effects of the ultimate factors and explain short-term and local historical processes (p. 87). The ultimate factors are environmental. The most important of them are the natural conditions that led to the rise of food production. Those world regions that became agricultural early gained a permanent advantage in history. The ultimate causes led, in much later times, to regional variations in technology, social organization, and health; these, then, were the proximate causes of modern history. More than half of *Guns, Germs, and Steel* is devoted to elucidating the ultimate causes, explaining why differing

environments led to differing rates in the acquisition of agriculture and explaining how the resulting differences largely determined the "fate" (his word) of different peoples.

The ultimate causes are three primordial environmental facts: the shapes of the continents, the distribution of domesticable wild plants and animals, and the geographical barriers inhibiting the diffusion of domesticates. The first and most basic cause is the shape of the continents: their "axes." A continental landmass with an east-west axis supposedly is more favorable for the rise of agriculture than is a continent with a north-south axis.[2] Diamond divides the inhabited world into three continents (he uses the term "continent" rather broadly[3]): Eurasia, Africa, and the Americas. Eurasia has an east-west axis; the other two have north-south axes. This has had "enormous, sometimes tragic consequences" for human history (p. 176). Africa and the Americas were unable to progress throughout most of history because their "axes" are north-south, not east-west.

But Diamond is not really talking about axes; mostly he is making a rather subtle argument about the climatic advantages that (in his view) midlatitude regions have over tropical regions. The world's largest continuous zone of temperate climates lies in a belt stretching across Eurasia from Europe in the west to China in the east. Rather persistently neglecting the fact that much of this zone is inhospitable desert and high mountains, Diamond describes this east-west-trending midlatitude zone of Eurasia as the world region that possessed the best environment for the invention and development of agriculture and, consequently, for historical dynamism. Why would one expect the origins and early development of agriculture to take place in the midlatitude belt of Eurasia? Diamond notes, correctly, that there are thought to have been several more or less independent centers of origin and that only two lie in the midlatitude belt of Eurasia: China and the Near East (his "Fertile Crescent"). Diamond needs--for his central argument about environmental causes in history--to show that these two midlatitude Eurasian centers were earlier and more important than were tropical centers (New Guinea, Ethiopia, West Africa, South and Southeast Asia, Mesoamerica, the Andes). And he needs, further, to show that the Fertile Crescent was the earliest and most important center because this region's environment led, by diffusion westward, to the rise of Western civilization. (Indeed, at various places in *Guns, Germs, and Steel* the traditional Eurocentric message is conveyed that the Fertile Crescent and Mediterranean Europe are a single historical region, implying that history naturally moved westward.)

The priority of the Fertile Crescent, according to Diamond, resulted from its climate in relation to the distribution of cultivable grains (the second ultimate factor). First he eliminates tropical regions because tropical domesticates are mainly nongrain crops. He uses an old and discredited theory to claim that root crops and the like (yams, taro, and so forth) are not nutritious and so could not have underlain important historical development. (Whatever deficiencies some of these staples may have had were amply compensated for by eating more of them, along with supplementary foods.[4]) He dismisses tropical grains. Maize, he says, is less nutritious than are the main Fertile Crescent grain domesticates, wheat and barley (apparently confusing moisture content with nutritiousness); and, because early domesticated varieties of maize had small cobs and kernels, it would follow (he thinks) that maize took much longer than did other grains to become fully domesticated. Rice is simply declared to have been domesticated in midlatitude China, not tropical Asia. Sorghum is ignored. The agricultural revolution occurred earlier in the Fertile Crescent than in China because the former has a Mediterranean climate. This proposition stands unsupported except for a thin argument: Mediterranean climate, says Diamond, favored the evolution of large-seeded grains. (Again, maize, rice, and large-seeded varieties of sorghum are dismissed, along with grains that have smaller seeds but are also used in various places as staples.) Diamond concedes that old dates have been obtained for agricultural origins in China and tropical New Guinea: respectively 7500 and 7000 B.C., as against 8500 B.C. for the Fertile Crescent. Apparently because the Chinese center does not enjoy a Mediterranean climate and the New Guinea center is tropical, neither (he argues) would be as early as the Fertile Crescent. Here he ignores the fact that far more research has been done in the Near East than in China, New Guinea, and various other ancient centers of domestication; and the fact that preservation conditions are much worse in the humid tropics than in the arid Near East. Thus, overall, the argument that the Fertile Crescent was somehow "fated" to be the first center of farming, and therefore of civilization, is unconvincing--yet it is a central pillar of Diamond's theory.

The third of the "ultimate factors" that go far toward explaining "the broadest patterns of history" is diffusion. Diamond invokes diffusion in arguments that need it: when he wants to demonstrate that the spread of some domesticate, or some technological trait, or some idea, was rapid and consequential. He neglects diffusion when it is convenient to do so: when he wants to emphasize the supposed isolation of some region (like Australia) and the consequences of that

isolation. With regard to the rise and development of food production, Diamond's central point is that the relative similarity of the environments within Eurasia's temperate belt accounts in large part for the putatively rapid diffusion of food production throughout this region as contrasted with the rest of the world. He seems not to notice that the agriculturally productive regions within this temperate belt are quite isolated from one another, separated by deserts and high mountains. Contrary to Diamond's theory, north-south diffusion, which generally meant diffusion between temperate and tropical regions, was quite as important as east-west diffusion. Diamond argues that agricultural traits will have difficulty diffusing southward and northward between midlatitude Eurasia and the African and Asian tropics because this requires movement between regions that are ecologically very different. Hence it must follow that midlatitude staple crops will tend not to grow well in humid tropical regions, and vice versa for tropical staples, because they are accustomed to different temperature and rainfall regimes and either need seasonal changes in day-length if they are midlatitude domesticates or, conversely, cannot tolerate such changes in day-length if they are low-latitude domesticates. This argument is used by Diamond mainly to support two of his theories. One holds that tropical regions of the Eastern Hemisphere tended to develop later, and more slowly, than did temperate Eurasia. The other is the theory that temperate regions of the Eastern Hemisphere which lie south of the tropics, notably Australia and the Cape region of South Africa, did not acquire agriculture largely because tropical regions kept them isolated from the Eurasian centers of domestication. The effect of the north-south "barriers" can hardly have been that important. The essence of domestication is the changing of crops, by selection and other means, to make them more suitable for the human inhabitants of a region. Always this involves some changes to adapt to different planting conditions. There are, indeed, true ecological limits. But the range of potential adaptation is wide. Most tropical regions with distinct dry and wet seasons are potentially suited for most of the major cereals grown in temperate Eurasia. Day-length is important for some crops, notably wheat, but in most cases adaptations could, and did, remove even this limitation. After all, in early times some kinds of wheat were grown as far south as Ethiopia; rice was grown in both tropical and midlatitude climates; sorghum, first domesticated in Sudanic Africa, spread to midlatitude regions of Asia. In the Western Hemisphere, maize was grown by Native Americans all the way from Peru to Canada. Most tropical root and tuber crops had problems spreading to regions that were cold or seasonally dry, but many of these crops, too, adapted quite

nicely: Think of the potato. Diamond's error treats natural determinants of plant ecology as somehow determinants of human ecology. That is not good science.

Diffusion is also stressed by Diamond as having been a significant factor in early world history, and some of his points are valid. But when, in various arguments, he posits natural environmental barriers as causes of nondiffusion, or of slow diffusion, he makes numerous mistakes. Some of these (as in the matter of north-south crop movements) are factual errors about the environment. Other errors are grounded in a serious failure to understand how culture influences diffusion (Blaut 1987). Two examples deserve mention.

"[What] cries out for an explanation is the failure of food production to appear, until modern times, in some ecologically suitable areas" (p. 93). All of these areas are midlatitude regions that are separated from midlatitude Eurasia by some intervening environment. Diamond devotes a great deal of attention to two such areas: the Cape of Good Hope and Australia. Why, he asks, did these two regions remain nonagricultural for so long? In both cases, the sought-after explanation is supposed to be a combination of barriers to diffusion and local environmental obstacles, notably a relative absence of potential domesticates. Cultural factors are ignored. The Cape of Good Hope is a zone of Mediterranean climate. What "cries out for an explanation" here is the fact that this area had the ecological potential to be a food-producing region but remained one of pastoralism until Europeans arrived. Bantu-speaking agricultural peoples spread southward into South Africa, but, says Diamond, they stopped precisely at the edge of the Mediterranean climatic region. This region was occupied by the Khoi people, who were pastoralists. Why did the Bantu speakers, who had invaded Khoi lands farther north, not do so in the Cape region and then plant crops there? Why did the Khoi not adopt agriculture themselves? Diamond denies, rightly, that this had to do with any failure of intellect; the causes, he argues, were matters of environment and diffusion. The crops grown by Bantu speakers, mainly the Xhosa, were tropical and, according to Diamond, could not cope with the winter-wet climate of the Cape region. So the Xhosa did not spread food production to the Cape because of its Mediterranean climate. The Khoi, for their part, did not adopt agriculture because Mediterranean crops that had been domesticated north of tropical Africa could not diffuse from North Africa through the region of tropical environment and agriculture to the Cape and because the Cape region lacked wild species suitable for domestication.

But the Khoi did not adopt Xhosa agriculture for quite different reasons. Almost all of the area in South Africa that the Khoi occupied before the Europeans arrived is just too dry to support rain-fed agriculture. The Khoi could have farmed in a few seasonally wet riverside areas. They must have known about the Xhosa techniques of farming (some of them lived among the Xhosa). But they chose to remain pastoralists. This had nothing to do with nondiffusion of Mediterranean crops, absence of domesticable plants, or nonadaptability of tropical crops. The decision to retain a pastoral way of life was an ecologically and culturally sound decision. (Actually, the South African zone of Mediterranean environment, with enough rainfall for cropping, is an extremely small belt along the southernmost coast, a region too small to bear the weight of argument that Diamond places on it.)

Australia also "cries out for explanation." Why did Native Australians not adopt agriculture during the thousands of years that neighboring peoples to the north, in and around New Guinea, were farming? Again we are told that the explanation is a matter of environment and location. Diamond accepts the common view of cultural ecologists that the hunting-gathering-fishing economy employed by Native Australians was productive enough to give them a reasonable level of living as long as they kept their population in check, which they did. (It is likely also that their way of life helped them to fend off efforts by non-Australians to penetrate Australia.) Why then, should they give up this mode of subsistence and adopt agriculture? Diamond takes it for granted that they would have done so had it not been for environmental barriers. Of course, parts of Australia are moist enough to support farming. But these regions, says Diamond, did not become agricultural because of their isolation from farming peoples outside Australia. The logic here is murky. Diamond notes that Macassarese traded with Australians in the northwest, near modern Darwin, but he believes that the Macassarese (famous sailors) could not have sailed onward to the Cape York Peninsula, where tropical crops could have been grown. Moreover, the Cape York Peninsula is separated from New Guinea by the narrow Torres Strait, with several stepping-stone islands nearly connecting the two landmasses. Why did not the Australians around Cape York adopt the agriculture practiced by New Guineans? Again: isolation. Diamond finds barriers to (north-south) diffusion that just did not exist. Probably Australians chose not to adopt agriculture because they managed quite well without it.

The Americas pose a special problem for Diamond. He asks, Why did not the New World, no small part of which enjoyed the temperate climate that Diamond believes to be so critical for cultural evolution, develop to the level attained in the Old World by 1492? There is a conventional answer to this question: late arrival of humans in the Western Hemisphere; long delay before population growth would make farming a useful innovation; thus a later agricultural revolution and later development of civilizations. It is fairly clear that the conquest of the New World resulted in part from its lower level of technology in 1492, but in much greater part from depopulation due mainly to diseases introduced by the Europeans. Diamond is not satisfied with this explanation. Recall his generalization about north-south versus east-west axes. He will have to explain all north-south cases; but there are only three: Africa, Southeast Asia with Australia, and the Americas. Moreover, tropical belts intervening between temperate regions will inhibit diffusion of agriculture (and everything else) between the northern and southern temperate regions. For Diamond, the most vexing of these cases is the New World. He wishes to explain the differences in level of development in 1492 between Eurasia and the Western Hemisphere in terms of the same principles that he thinks apply to other regions, and thus show that the environmentalistic case for Eurasian superiority or priority applies to all other parts of the world, including the Americas.

Diamond therefore rejects arguments that the differences between the hemispheres were caused by the lateness of New World settlement, leading to a late agricultural revolution. Instead, he argues--on the basis of no evidence whatsoever--that population growth in the New World was so rapid that the New World would have been on a social and technological par with the Old World in 1492 had it not been for the effect of environmental factors.[5] There were, he says, four main environmental reasons for Western Hemisphere backwardness in 1492. First, the Americas have a north-south axis. This must inhibit diffusion of cultural innovations between North and South America and later between the northern and southern regions of complex society. Second, the region lying between Mexico and Peru is tropical; hence a barrier for temperate-climate crops domesticated in each of the two regions. Third, North and South America are connected by a narrow neck, the Isthmus of Panama, and this inhibits diffusion. Fourth, diffusion northward from the Mesoamerican culture hearth into the temperate part of North America was rendered difficult and very slow, because, according to Diamond, the deserts of northern Mexico separate central Mexico from temperate North America. One responds to the

first of these environmentalist arguments with the same counterarguments offered earlier: the fallacies of north-south axes and tropical nastiness. The third argument is invalid because the width of the Isthmus of Panama did not inhibit diffusion: There was sea travel, and there was a diffusion of culture traits between the two continents. And as to the fourth argument, it is simply bad geography; there is no desert separating northeastern Mexico from central and eastern North America and somehow inhibiting diffusion northward.

The final part of Diamond's explanation for the agricultural superiority of Eurasia concerns domesticated animals. He is on somewhat firmer ground here when he stresses the priority of western midlatitude Eurasia, since many important (large) species were domesticated in the region of grasslands, desert, open brushland, and forest extending from North Africa through the Near East into Central Asia. Animal domestication played a lesser role than did plant domestication in the origins of agriculture, so a Eurasian priority in this aspect of agriculture can be balanced off against other regions' priority in other aspects, such as tropical Asia in rice and taro or tropical Africa in yams and sorghum. Moreover, although the Near East and adjoining North Africa and Central Asia was the main area of domestication, one species of cattle, water buffalo, and (probably) pigs were domesticated elsewhere in the one hemisphere; llama and alpaca in the other, and so forth. Thus it is more than an exaggeration for Diamond to say that "the successful [large animal] domesticates were almost exclusively Eurasian" (p. 157). Diamond wants to show that Eurasia's importance in animal domestication was one of the primary reasons why temperate Eurasia was fated to gain superiority in subsequent cultural evolution. He argues that large ungulates in tropical regions somehow were not suitable for domestication, but this is circular. Diamond can only show that the species that were domesticated were suitable for domestication. His crucial arguments about animal domestication concern the supposed implications and consequences of the process, and here he rehearses familiar and erroneous theories. That the horse revolutionized warfare, hence giving western Eurasian (and especially Indo-European) horse-using warriors an advantage over all others, leading then to the development of complex societies first in this region, is purely conjecture, and widely disputed. The use of horses in warfare may just as easily have been the consequence of early conquests as the cause of them. Diamond's contention that horses and cattle could not be used effectively in tropical West Africa because of diseases such as trypanosomiasis is also invalid: The tsetse-fly-infested region covers only the wetter forest belt; disease-resistant breeds

were widely employed in tropical Africa; and tsetse infestation presumably increased dramatically in recent centuries due mainly to the slave trade and the consequent spread of bush (Turshen 1987; Giblin 1990; Blench 1993).

Diamond's claim that the domestication of cattle in western Eurasia explains the use of plows in this region is again invalid; plows were used early in China, also in India, Southeast Asia, and other tropical areas, within the limitation that plowing generally is unimportant for humid-tropical staple crops other than wet rice. Finally, Diamond's claim that the domestication of the horse and cattle in western Eurasia gave this region a great advantage in the transport of products, hence in the distribution of surplus production, is, again, invalid: Draft animals came into use as a consequence of the development of surplus-producing agriculture, not as a cause of it. Animal domestication and animal husbandry were indeed important for cultural evolution, but they gave no ultimate advantage to temperate Eurasia.

The "ultimate" environmental factors or forces, which caused agricultural societies to arise in some places and not others, continued to shape cultural evolution thereafter, according to Diamond. He discusses the evolution of writing, sociopolitical complexity, and technology, devoting most attention (not surprisingly) to technology. Here is Diamond's summary of the argument about technological evolution after the Neolithic:

[Three] factors--time of onset of food production, barriers to diffusion, and human population size--led straightforwardly to the observed intercontinental differences in the development of technology. Eurasia ... is the world's largest landmass, encompassing the largest number of competing societies. It was also the landmass with the two centers where food production began the earliest: the Fertile Crescent and China. Its east-west major axis permitted many inventions adopted in one part of Eurasia to spread relatively rapidly to societies at similar latitudes and climates elsewhere in Eurasia. ... It lacks the severe ecological barriers transecting the major axes of the Americas and Africa. Thus, geographic and ecological barriers to diffusion of technology were less severe in Eurasia than in other continents. Thanks to all these factors, Eurasia was the continent on which technology started its post-Pleistocene acceleration earliest and resulted in the greatest local accumulation of technologies. (pp. 261-262)

Diamond asks: What would lead to the piling up of inventions in certain areas, among certain groups, and hence to the steady technological development in those areas? The broad answer is given in the passage quoted above. But we have seen that the axes are irrelevant and that the supposed "geographic ... barriers to diffusion of technology" do not exist--or rather, that the barriers that chop midlatitude Eurasia into separate agricultural regions are at least as significant as are those between midlatitude Eurasia and tropical lands to the south.

What, then, is left of Diamond's explanation? Not very much. Diamond supplies a brief and standard catalog (hardly an explanation) of the development of technology after Sumer and of the way in which nonagricultural innovations spread westward to Europe and evolved in China. His description fails to mention that diffusion eastward and southward from the Near East via the Indian Ocean, and southward from China through the South China Sea, was as important, and as easy, as was diffusion westward. (Diffusion by way of India and the Inner Asian land route is not discussed.)

The second thesis is a cracker-barrel theory about the things that supposedly lead to invention and innovation. In essence, Diamond suggests that the larger the population and the larger the number of so-called competing societies, the more inventions and innovations there will be. Therefore, because Eurasia is geographically the largest landmass, it will have the largest number of inventions and innovations. And they will diffuse through Eurasia's temperate belt more rapidly than they would in nasty tropical climates. Diamond uses roughly the same form of argument when he discusses the diffusion of writing and sociopolitical complexity from the Near East westward to Europe.

Diamond's argument proceeds inexorably, deterministically, to the conclusion that Europe and China were fated to be the winners in the worldwide historical competition because of their environmental advantages. History centers itself on temperate Eurasia; and, within that, the two regions of Eurasia with the best environmental conditions for agriculture--for the origins of agriculture, and thereafter for food production--are Europe and China. Diamond accepts the likelihood that an independent agricultural revolution occurred in China.

Thereafter, China's favorable environment led to development, paralleling Europe's. Moreover, "the history of China offers the key to the history of all of Asia" (p. 324). Diamond states as fact some extremely uncertain, and on occasion quite dubious, hypotheses to argue that an agricultural revolution in central China led to the spread of farming peoples southward, displacing hunter-gatherer peoples in island Southeast Asia; thus to show that there was here a north-south axis that had to favor temperate China at the expense of tropical Southeast Asia (and of islands beyond). But it is by no means certain that farming is older in China than in Southeast Asia and Melanesia. Moreover, rice may have been domesticated in India or Southeast Asia, not China, and maybe as old as the staple crops first domesticated in China (Glover and Higham 1996).

Diamond deploys data from historical linguistics to argue that Austronesian culture, and apparently also people, spread southward into the tropics from mainland China, via Taiwan. Indeed, there is not much doubt that Austronesian languages originated somewhere in the coastal region stretching from (tropical) South China down to Vietnam and Thailand--but not necessarily from a hearth in midlatitude China. In sum, Diamond argues that China always had priority and centrality in all of eastern Eurasia, and history elsewhere in that region mainly reflects diffusions and migrations from a temperate-China core. This is mostly speculation, but Diamond's theory requires that it be true.

Finally we come to Europe. Much of *Guns, Germs, and Steel* is devoted to proving the primacy throughout history of midlatitude Eurasia, and within this region, of Europe (supposed heir to the Fertile Crescent) and China. If the argument stopped there, we would have a sort of Eurasia-centrism, not Eurocentrism. But Diamond's purpose is to explain "the broadest patterns of history," and so he must answer one final question: Why did Europe, not Eurasia as a whole, or China, or Europe and China in tandem, rise to become the dominant force in the world? Diamond's answer is, predictably: the natural environment. The ultimate causes of Europe's rise, relative to China, are a set of qualities that Europe's environment possesses and China's environment lacks, or that China's possesses but to a lesser degree. The ultimate environmental causes then produce the proximate causes--which are cultural: The "proximate factors behind Europe's rise [are] its development of a merchant class, capitalism, and patent protection for inventions, its failure to develop absolute despots and crushing taxation, and its Graeco-Judeo-Christian tradition of empirical inquiry" (p. 410).

This, of course, is utterly conventional Eurocentric history (for critiques, see Wolf 1982; Abu Lughod 1989; Blaut 1993, 2000; Hodgson 1993, Frank 1998). There is now a huge literature that systematically challenges each of these economic, political, and intellectual explanations for the rise of Europe. Much of this literature consists of Eurocentric arguments of one sort attacking Eurocentric arguments of some other sort--yet Diamond ignores all of this scholarship and simply announces that these (and a few other cultural things) are the true proximate causes of the rise of Europe. He seems to view the matter as settled. The problem, for him, is to find the underlying environmental causes.

Topography is the key; or more precisely topographic relief and the shape of the coastline. "Europe has a highly indented coastline, with five large peninsulas that approach islands in their

isolation. ... China's coastline is much smoother. ... Europe is carved up ... by high mountains (the Alps, Pyrenees, Carpathians, and Norwegian border mountains), while China's mountains east of the Tibetan Plateau are much less formidable barriers" (p. 414).

These somewhat inaccurate observations about physical geography lead into a truly classic argument of Eurocentric world history: the theory of "Oriental despotism." [6] This is the belief that the so-called Oriental civilizations--essentially China, India, and the Islamic Middle East--have always been despotic, that Europeans alone understand and enjoy true freedom, that Europe alone, therefore, has had the historical basis for intellectual innovation and social progress. Diamond invokes a pair of well-known environmentalistic theories, adding little new, about how physical geography is the main reason why Europe, not China, acquired the cultural attributes that gave it ultimate hegemony: "a merchant class, capitalism ... patent protection for inventions ... failure to develop absolute despots and crushing taxation" and the rest (p. 410). Here is how it works: China is not broken up topographically into isolated regions, because it does not have high mountains like the Alps and does not have a coastline sufficiently articulated to isolate nearby coastal regions from one another. This explains the fact that China became culturally and politically unified 2,000 years ago. Europe, on the other hand, could not be unified culturally and politically because of its indented coastline (its "caples and bays," in the traditional theory) and because of its sharply differentiated topographic relief (its many separate geographical "cores," in the traditional theory).

Europe therefore developed into a mosaic of separate cultures and states. China's geographically determined unity led it to become a single state, an empire; and an empire is by nature despotic. Why? Because a person cannot leave one state and emigrate to another to avoid oppression, since there is but one state, the Chinese empire. Hence there is continued oppression of the populace and centralized manipulation of the economy. So: no freedom, little development of individualism, little incentive to invent and innovate (taxation, political control, and the like), no development of free markets, and no development of a polity resembling the modern democratic nation-state. These "harmful effects of unity" (p. 413) led China to, in essence, stagnate after the fourteenth or fifteenth century. Europe, by comparison, continued to forge ahead. Hence Europe triumphed.

The geography is wrong, and so is the history. Southern Europe has the requisite "caples and bays" and separate geographical "cores." But the historical processes that Diamond is

discussing here pertained to the last 500 years of history, and most of the economic and technological changes during this period, those that are relevant to his argument, occurred mainly in northern and western Europe, which is flat: the North European Plain from France to Russia; the extension of that plain across France almost to the Spanish border; and southern England. Even central Europe is not really isolated from northern and western Europe. There are no serious coastline indentations between Bordeaux and Bremen. If we look at the distribution of population throughout this region, we see that there is no isolation and not very much development of cores.

The crystallization of northern Europe's tiny feudal polities into modern states occurred for reasons that had little to do with topographic differentiation; the boundaries of most of these states do not reflect topographic barriers, and most of their cultural cores are not ecological cores. The idea that the pattern of multiple states somehow favored democracy is (in my view) a Eurocentric myth: Each of these states was as despotic as--indeed, usually much more despotic than--China, and emigration from one polity to another was not substantial enough to have had any effect on the development of democracy (Blaut in press). Furthermore, what Diamond calls Europe's "competing" states were often warring states; probably China was more peaceful during most centuries than was Europe, and an environment of peace surely is more conducive to cultural development than is one of war. Finally, Diamond's view of Chinese society is based on outdated European beliefs. China did not stagnate in the late Middle Ages: Chinese development continued without interruption, and Europe did not outdo China in technology, in the development of market institutions, and indeed in the ordinary person's standard of living, until perhaps the later eighteenth century." In short, the idea that China's topography led to China's achievement of a unified society and polity, and that this unity somehow led to despotism and stagnation, is simply not supported.

Diffusion is also supposed by Diamond to have played a large role in the triumph of Europe over China. Throughout *Guns, Germs, and Steel* he argues that geographical barriers to diffusion are one of the main reasons why some societies failed to progress. But China, he argues, had fewer barriers to diffusion than Europe had. Shouldn't China, therefore, have progressed more rapidly than barrier-ridden Europe? How does he circumvent this contradiction? First, he introduces a tortuous theory that not only is too little diffusion a hindrance to development but so is too much diffusion. Like the second of the Three Bears, Europe had just

the right balance between too little differentiation and too much, and this, says Diamond (wrongly), led to more intense diffusion of innovations in Europe than in China. Second, he claims--another traditional argument--that Europe's lack of political unity somehow favored the diffusion of innovations, whereas it certainly did the opposite. Political boundaries are barriers to human movement, and because they frequently correlate with linguistic boundaries they can be barriers to communication. The third argument is largely an implicit one, though evident nonetheless. Diamond claims that social and technological development moved steadily westward from the Fertile Crescent to Europe. He states (incorrectly) that writing, invented in the Fertile Crescent, was merely a tool of the ancient despotic bureaucracies until the alphabet diffused westward to Greece, where, he says (again incorrectly), the Greeks added the vowels and thereby transformed it into an instrument of creative writing: of innovation, abstract thought, poetry, and the rest. In essence this is an argument that intellectual progress diffused westward and became consequential when writing reached Europe. This must be the basis for his argument that "the Graeco-Judeo-Christian tradition of empirical inquiry" (p. 410) is one of the reasons why Europe triumphed. Yet throughout *Guns, Germs, and Steel*, Diamond insists (rightly) that all peoples are equally creative, equally rational. This is a contradiction but not really a historical problem, because "empirical inquiry" was not invented by Europeans and was as highly developed in China, and other civilizations, as it was in Europe.

Guns, Germs, and Steel is influential in part because its Eurocentric arguments seem, to a general reader, to be so compellingly "scientific" Diamond is a natural scientist (a bioecologist), and essentially all of the reasons he gives for the historical supremacy of Eurasia and, within Eurasia, of Europe, are taken from natural science. I suppose that environmental determinism has always had this cachet of scientism. I dispute Diamond's argument not because he tries to use scientific data and scientific reasoning to solve the problems of human history. That is laudable. But he claims to produce reliable, scientific answers to these problems when in fact he has no such answers, and he blithely ignores the findings of social science while advancing old and discredited theories of environmental determinism. That is bad science.