GUNS, GERMS, AND STEEL (1997)
Jared Diamond

I. Introduction

Why did Western Europeans conquer native populations on other continents, instead of the other way around? Spanish and Portuguese are spoken all over in South America, but not Aztec and Inca in Spain and Portugal. Why? Why were native populations in Africa taken as slaves and white Europeans not? What circumstances led to the different paths and rates of human history over the past 13,000 years?

Jared Diamond attempts to establish the ultimate cause of racial and cultural differences that might account for this. In Diamond’s argument, it is the Environment that is responsible, specifically the plants and animals native to a region that influenced its evolution. He states:

“History followed different courses for different peoples because of differences among people’s environments, not because of biological differences among peoples themselves.”

Sedentary lifestyle farming could only be developed in regions that had domesticable plants and animals. Those without them remained in largely primitive hunter gatherer societies. In the former, societies progressed toward the rise of towns, languages, and technologies—and ultimately toward the exploration and conquest of other lands and their peoples.

After about six million years of evolution in Africa, the Homo erectus species spread to Eurasia, evolving into the Neanderthals with their crude tools and artifacts. Cro-Magnons appeared about 50,000 years ago—the “Great Leap Forward”—according to Diamond.

By the end of the last Ice Age, humans had populated all of the world’s major continents, and at that point, sometime around 11,000 B.C., the “playing field was even,” i.e., it would have been impossible to predict where “civilization” would develop first.

But humans lived in vastly different environments, and this influenced their development. Diamond offers the Polynesian “experiment” in which the Maoris conquered the Chatham Island’s Morioris in 1835—the farmer Maoris versus the hunter-gatherer Morioris. The same people by ancestry, separated by different environments.

Another example: In 1532, 168 Spaniards killed thousands of the approximately 80,000 assembled Inca soldiers, chased the others away, and captured their emperor, Atahualpa ... all in a single day. How? Guns, steel weapons (swords, etc.), armor, versus clubs and hand axes. Horses (speed and protection) that frightened the Indians, who’d never encountered them before. Smallpox, introduced earlier by previous Spanish settlers, which led to the death of the previous emperor and a civil war over the succession.
Technology, in the form of ships, political organization, and a written language that allowed them to learn of and from previous encounters.

In sum, guns, steel, domesticated animals, nasty germs, shipbuilding technology, and a written language—these factors led to the dominance of the Europeans. But why did the Europeans have these things and the natives not? Food production!

2. The Rise and Spread of Food Production

According to Diamond, the ultimate cause is food production. "Guns, germs, and steel" were first developed by societies that had domesticable plants and animals. And that, of course, is what allowed them to conquer or dominate other societies. Farming and herding yield significantly more food per square acre than hunting and gathering. This allows farmers to settle in higher densities and support a higher birthrate than can nomadic people who have to carry their children with them. In addition to sheer numbers, farmers also benefit in that they can produce food surpluses that permit specialization in more than food production, i.e., they can support inventors, scribes, or soldiers, for example.

Food production apparently began independently in only a few places in the world and then spread to other areas. Five such places have been identified by carbon dating methods: the Fertile Crescent, China, Mesoamerica, the Andes, and the eastern United States.

The choice to farm was made gradually. Once farming techniques were developed by others, they diffused to neighboring societies. Farming led to larger and denser populations, that required more food and, thereby, a push for better techniques, more cultivatable land, and more food, which in turn led to larger and denser populations, and so on.

"... the latrine may have been the greatest ‘lab’ available to early farmers, offering accidental discoveries as the seeds and berries hunter-gatherers ate subsequently germinated and grew from their feces." (Barnes and Noble Reader’s Companion, p. 8).

But many areas simply lacked the domesticable plants necessary for farming. Diamond points out that there are some 200,000 wild plants and only a few hundred of them have been domesticated. Only twelve of these have good enough sources of nutrients and calories, and they account for over eighty percent of the world’s agriculture. And they had to be available in “packages” for hunters and gatherers to choose farming.

Analogous remarks follow for animals. Domesticable, large animals such as cows, horses, oxen, goats, and sheep, were found in only a few regions of the world, and like plants, only a small fraction of them were domesticable. Diamond points out that of the 148 large herbivorous mammals, only 14 have ever been successfully domesticated.
Germs were an important “big idea” of Diamond’s. The animals brought them into contact with humans, and many of the first domesticators of animals became sick and died. But gradually domesticators developed immunities to these diseases (e.g., to smallpox). But they then infected those without such immunities and wreaked havoc among aboriginal peoples.

Finally, Diamond argues that the orientations of the large continents determined both their suitability for farming and the likelihood that farming techniques would spread. East-West axes were much more favorable to the latter than were North-South axes. Thus farming diffused to Europe from the Fertile Crescent, but not to South America from Mexico. The reason for this surely is that most societies along an East-West axis would be at about the same latitude, and therefore have similar climates and rainfall. The same would not be true along a North-South axis.

3. From Food to Guns, Germs, and Steel

Diamond then moves from describing the ultimate cause, food, to proximate causes such as guns, germs, and steel. He argues that the sedentary lifestyle associated with farming gave rise not only to diseases, but also to language, technology, and centralized government.

**Germs.** Nearly all of the major epidemic diseases of humans (smallpox, malaria, measles, etc.) have come through contact with animals, even AIDS. The dense settlements made possible by the rise of farm-fed cities made epidemics possible. Immunities developed over time in Eurasia, but natives of the New World, although they also lived in cities, did not have the same domesticated animals and thus didn’t develop the same immunities. Thus when exposed to these diseases, many died, in some cases virtually entire tribes.

**Writing.** The spread of a written language came with the development of farming, as scribes were called upon to keep records for bureaucracies that collected taxes and controlled and managed surplus food.

**Technology.** With the development of sedentary, stratified societies with surplus food, it became possible to support craftsmen and inventors who were free to invent tools and ideas. Those lacking the advantages brought about by such tools and ideas (e.g., guns) often were conquered and usually assimilated. But some cultures were less receptive than others. Japan, for example, was manufacturing guns as early as the middle 1500s, but less than a century later, the Samurai elite managed to ban gun manufacturing and to eliminate nearly all guns in the country. Because they were an island nation, this abandonment didn’t lead other societies to take advantage.

**Government.** Large and dense settlements required more complicated organizations to govern them. The evolution of bands to tribes to chiefdoms, and ultimately to states, led to large bureaucracies, formalized laws, a division of labor, taxes, and public works, such as irrigation systems.
Dense populations require more complex organization and this in turn allows for higher levels of food production. This then generates more population growth and denser settlements, and the higher levels of food production allow for more non-food-producers to devote their time to soldiering, inventing, and bureaucratic pursuits. This pattern forms the foundation of societal development.

4. Questions

1) Is environment everything? How about religions, ideologies, and influential individuals? (Are the latter producers or products of the environment? “Diamond’s focus on environments and ultimate causes always pushes back from the singular event to its preconditions.”)

2) Why did the Fertile Crescent originate so many important developments and yet why did Europe end up spreading its culture to the rest of the world? Climate? Mammals? (Ecologically fragile environment that collapsed. Europe acquired the plants, animals, and techniques and had a hardier climate and more rainfall and was able to “sustain intensive farming and herding without significant erosion.” Also the important role of competitive states.)

3) Why is diffusion more likely to happen across east-west axes rather than across north-south? Barriers? (Being on the same latitude allows neighbors to learn and adopt the same techniques since the climate is likely to be the same. And this also allows the same animals and plants to thrive.)

4) Why were animals so important? Large ones served as beasts of burden (oxen pulling plows) or as providers of speedy mobility and an edge in battle (horses). They brought germs and diseases and, ultimately, immunities. This led to the mass devastation of native populations that did not domesticate those particular animals that carried the diseases—flu from pigs, measles and tuberculosis from cattle, and so on. Animal manure for fertilizing, milk and eggs for food, and pelts for clothing were other important advantages offered by domesticated animals.

5. What was the importance of China being politically unified at the same time that Europe remained a collection of competing states? (“...one voice could speak for all of China, for better or worse.” Europe’s disunity fostered competition, and technological innovation. “No one voice could speak for all of Europe, so no new development could ever be put down completely.”)