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2011-11

Guns, Germs, and Steel: The Fates of Human Societies (Book Review)

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Repository Citation

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Jared Diamond, *Guns, Germs, and Steel: The Fates of Human Societies* (W.W. Norton & Company), 1997. Reviewed November 2011 by Harvey Fenigsohn.

"Why is it that you white people developed so much cargo and brought it to New Guinea, but we black people had so little cargo?"

In 1973, Yali, an inquisitive native of Papua New Guinea, posed the above question to his American friend, Professor Jared Diamond. By "cargo," Yali meant all the European colonists' technology and material goods from tractors to umbrellas. Diamond came to realize that Yali's question raised many others, e.g., why did some continents remain fixed at an early stage of development, or progressed more slowly, while others moved far ahead, gaining wealth and power, ultimately dominating the others? Specifically, why did Eurasia (Europe and most of Asia) advance well beyond sub-Saharan Africa, pre-Columbian America, Australia, the islands of the Pacific, and those of South East Asia? Diamond's attempt to fully answer Yali's question became the best selling Pulitzer Prize winning book, *Guns, Germs and Steel: The Fates of Human Society* (1997).

If it is possible for a scientist to solve the puzzles raised by Yuri's question, Jared Diamond may well be the one. Professor of Physiology and later Professor of Geography at UCLA, Diamond's research ranges from ornithology and molecular physiology to evolutionary biology and biogeography. Conducting fieldwork in New Guinea for over 33 years, he speaks twelve languages, and has published scholarly journal articles and popular science books on subjects as diverse as human sexuality and the evolution of tropical birds. In addition to the Pulitzer and awards for excellence in teaching, his many honors include a MacArthur Foundation grant and a National Medal of Science.

Describing his methodology, Diamond clearly considers himself more scientist than historian: "The book's subject is history, but the approach is that of science ... historical sciences such as evolutionary biology and geology" (17). Drawing from these sciences, as well as archeology, anthropology, genetics, linguistics, and epidemiology, Diamond derives a theory of history based on massive scholarship supported by exhaustive research. (Each of the book's nineteen chapters cites a multitude of sources.) Diamond concludes that environmental factors, the results of geographic location, inevitably determined the course of human history. The following overview/ summary should help the reader better understand the basis of Diamond's thesis. A critical assessment follows.

Diamond begins by refuting the racist fallacy that the Eurasians' superior intelligence enabled them to triumph over all other racial and ethnic groups. He describes the impressive cognitive skills of New Guinea's natives and notes that no IQ test has ever proved that one race or ethnic group is more intelligent than another. The author reveals that one reason he wrote book was to help debunk the myth of racial superiority, a persistent belief openly expressed in Japan and subconsciously harbored in many other parts of the world.

Continuing, Diamond observes that history before the emergence of writing around 3,000 BC has received scant treatment, although "it constitutes 99.9 per cent of the five-million-year

history of the human species" (9). To remedy this omission, he searches for "ultimate explanations ... pushing back the chain of historical causation as far as possible" (39). Ever the scientist investigating cause and effect, the author moves back and forth through time, analyzing and synthesizing the pre-history and history of every continent from prehistoric times to the present. As Diamond says somewhat tongue-in-cheek, his book could be titled "A short history of everybody for the last 13,000 years" (9).

Interestingly enough, the author denies that powerful weapons (guns), infectious diseases, (germs), and heavy metal (steel), *caused* Eurasian hegemony. Instead, arguing that "guns, germs, and steel" were the means but not the "ultimate causes" (23) of European and Asian domination, he maintains that the original causes, rooted in the preliterate past, have never been adequately explained. To reveal those ancient causes, Diamond takes us back to the origins of humankind 7 million years ago when our progenitors evolved from apes to *Homo erectus* to *Homo sapiens*. Emerging from Africa as hunter-gathers, the first humans wandered in search of wild animals to hunt and wild plants to gather, concentrating only on survival.

Drawing from archeological findings, Diamond points out that because they originated at more or less the same time, no one group of hunter-gathers had a head start over the other in developing their societies. He notes, however that at the end of the Ice Age around 11,000 BC, groups in fertile areas of China and in especially arable river valleys of the Tigris and Euphrates (the Fertile Crescent) learned that certain wild plants could be cultivated and certain wild animals domesticated. The Chinese first began, for instance, to cultivate rice and soy and Fertile Crescent societies, wheat and barley. Similarly, the Chinese first learned how to domesticate water buffalo and tea and the Fertile Crescent societies, cows and sheep. Only much later, other groups around the world learned these techniques from the earliest discoverers, or developed them on their own. However, some societies, e.g. Australian aborigines, remained hunter-gathers for 40,000 years, their isolation and barren land both a product of their geographic location.

Diamond emphasizes the incalculable advantages gained by those living in geographic areas most favorable to an agrarian life style. No longer compelled to forage for food, nomads settled down in stable communities that would later become cities with literacy, technology, and the "cargo" Yali questioned. Diamond explains such advantage did not come easily. He points out that of the many plant species on earth, relatively few can be cultivated and "In all, of the world's 148 big wild terrestrial herbivorous mammals-the candidates for domestication-only 14 passed the test" (168). In other words, of the animals that might have been domesticated, only a relatively few had the necessary characteristics (e.g. diet, growth rate, disposition) making them actually suitable for domestication.

The author also explains how some of the earliest Eurasian farmers and herdsmen improved their growing and breeding methods, accumulating enough surplus food to support artistic and intellectual members of their communities. He shows how these talented few became craftsmen, artisans, and later scribes. Advancing far beyond the stone tools and wooden spears of hunter-gathers, they fashioned increasingly more effective implements and weapons from alloys. Learning to make bronze from copper and tin, they later discovered how to smelt iron, culminating in the guns and steel of the book's title. Also, a Eurasian society of sedentary Sumerians made another historical breakthrough in learning to transform speaking into writing.

Diamond demonstrates in detail how the earliest scribes painstakingly transformed Middle Eastern Cuneiform into a written language - a revolutionary achievement leading to all the advances afforded by the written word.

The author shows how environmental conditions discouraging agriculture on other continents prevented those societies from advancing, while Eurasians developed literate, urban societies. He notes for example, that the Indians of what is now the American southwest lacked both a written language and metallurgy, their environment allowing little time for anything but food production. He concludes that it may have taken thousands of years for the Indians to evolve wild teosinte into maize, one of the rare plant species available for them to cultivate. With few animals to domesticate, compelled to remain hunters, the Indians were eventually overcome by the guns and steel of the European invaders.

Diamond describes how European's armor and weapons of steel enabled conquerors to colonize. Here, momentarily shifting from scientist to historian, he narrates a dramatic account of how Pizarro's 168 Spanish soldiers defeated the Incan emperor's 80,000 warriors. The mounted conquistadors intimidated the Indians with a domestic animal totally unknown to them. A huge native army, armed only with weapons of stone and wood, fell to relatively few Europeans sheathed in steel armor, wielding steel swords, and firing steel guns. The Spanish conquest of Meso-America was similarly repeated on every continent Europeans came to control and exploit. Information about the New World spread by means of another groundbreaking invention constructed of steel, the printing press (1455 AD). Diamond reminds us the technology of the Industrial Revolution, too, depended on the same metal, as did modern warfare.

Nevertheless, metallurgical advancements, as Diamond noted earlier, were a means rather than a cause of Eurasian dominance and the development of steel only partially answers his rather bluntly stated question: "why weren't Native Americans, Africans, and aboriginal Australians the ones, who decimated, subjugated, and exterminated European and Asians"(9)?

Diamond's chapters on the "germs" of the title provide a clear answer. The lethal microbes the Europeans unwittingly imported to the New World proved far more devastating than their guns. Smallpox brought by the Spaniards killed nearly half of the Aztecs and by 1619, Mexico's population declined from approximately 29 million to 1.6 million. The Europeans, however had earlier developed immunities to these disease originally contracted from domestic animals. In the 14th century, for instance the Black Death (bubonic plague) killed 70 percent of some European cities, but the immune survivors remained alive to decimate whole native populations who had neither immunity nor genetic resistance. Besides smallpox, other infectious diseases, including measles, influenza, and typhus claimed their victims as did yellow fever and tuberculosis. Diamond notes, "... the Indian population of Hispaniola declined from around 8 million, when Columbus arrived in 1492, to zero by 1535" (213). Thus, the Old World prevailed over the New.

A study of this magnitude will inevitably draw detractors, in this case, from two audiences: the general public and professional historians. Some general readers may find Diamond's work redundant and repetitive, laden with technical language, and at times ponderous, despite its attempts at informality. More often, general readers have found his often informal style

appealing, far from pedantic and often entertaining. They admire the author's scholarship, and find the book compelling, despite the abundance of technical details.

Some historians concluded that Diamond belabors the obvious, drawing conclusions about environmental influences long agreed upon. Others criticized the work for its relentless "biological determinism," his emphasis on the inevitability of history as suggested by the book's subtitle, "The Fates of Human Society." Though he considers economics and politics, some argue that Diamond understates their place in history, placing too much emphasis on the effects of science, and not enough on the positive and negative effects of outstanding individuals, e.g. Gandhi and Hitler, and the importance of ideology, religion, and culture.

Not surprisingly, since the book was published in 1997, some of the author's conclusions can be called into question by later discoveries. For instance, Diamond states that "there is little or no evidence of hybridization between Neanderthals and Cro-Magnons" (41). However, more recent studies of the human genome reveal the presence of Neanderthal genetic material in modern humans. Also, the author tends to view Europe as more globally dominant than China, but since the book was written, the Chinese have grown increasingly more influential in affecting world trade and the global economy. Nevertheless, even the author's harshest critics credit his scholarly achievement in mastering the many academic fields used to support his conclusions. Certainly, Jared Diamond's *Guns, Germs, and Steel* well deserves recognition for calling to our attention the enormous importance of the natural world in helping to shape our destiny.