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The Have and Have-Nots of History

Why is it that the Western World, Europeans specifically, developed such an advanced technological society that ultimately led to their conquest of the known world, whereas other cultures did not? This is the question posed by Jared Diamond in his bestselling book, *Guns, Germs, and Steel: The Fates of Human Societies*. Some may wonder why this question is even worth asking, since its roots lie so far in the past, but the answer may yield a method for helping non-technologically advanced countries catch up to the rest of the world. In the centuries following the 1500s, European explorers became increasingly aware of differences among their technology and that of the rest of the world. These differences were assumed to stem from the belief that Europeans were genetically more intelligent as well as evolutionarily superior. Today this explanation seems outdated and illogical, but many still cling to it for lack of a better answer. For instance in Japan, as well as many other countries throughout the world, this idea is still widely believed and publicly accepted (Diamond 18-19). Throughout history, technologically advanced societies have shared in this unethical belief that they are a superior people for developing these technologies, resulting in the misuse of their technological advantages to undermine their fellow man. To answer the question posed by Jared Diamond, as well as disprove the theory of superior genetics, we will examine how geography affected the development of agriculture and the domestication of animals, which then led to a growth of technologies such as guns, steel and written languages. In addition, we will dissect historical encounters between Europeans and other cultures in order to understand the underlying motives

and thoughts of both sides and how the presence of guns, germs, and steel played a pivotal role in determining the outcomes of these encounters.

Between 11,000 and 3,000 BC, the majority of mankind sustained them self through a hunter-gatherer lifestyle. During this time period a remarkable event occurred in which an increasing number of people began farming. For a hunter gatherer, only a small amount of plants and animals were actually edible, while farmers were able to produce more food by focusing on the cultivation of edible plants. On average, an acre of planted crops could support anywhere between 10 to 100 times more people than the hunter gatherer method. Furthermore, hunter gatherer societies moved often to reach new feeding grounds, whereas farming societies tended to stay in one place because of their steady supply of food. This allowed farming societies to produce as many offspring as they could feed, about one per year, while hunter gatherers on average produced an offspring every four years. As a result farming societies had denser populations that set up permanent communities. These farming communities soon produced a surplus of food that could be stored for later use, leading to the establishment of professionals, like kings, bureaucrats, and soldiers who did not need to farm their own food. This newly established political system allowed these communities to mount sustained wars in order to better protect themselves and conquer their enemies (Diamond 86-90). It is quite clear that an agriculture based society had a better technological head start than a hunter gatherer based one, but why then did so few cultures develop the use of agriculture on their own? The answer to this question lies in geography.

Geography, more than any other element, has played the largest role in shaping the dispersal of technology in the world we live in today. The development of agriculture would prove to be the first step on the long road towards the modern day technological societies.

Agriculture originally developed independently in five separate locations: the Fertile Crescent, China, Mesopotamia, the Andes, and the Amazon Basin (Diamond 98). These locations all shared a common advantage of edible plants which could be easily domesticated, including wheat, rice, or corn. Invisible features such as seed dispersal mechanisms, germination inhibition, and reproductive biology predestined the use of these plants for domestication (Diamond 122). The domestication of these crops occurred without the knowledge of the people growing them, as opposed to the intentional selective breeding of crops used today (Diamond 106). A tendency to pick plants containing the most desirable traits, for example big and tasty berries or non shattering wheat and barley stocks, led to the accidental domestication of certain crops, further increasing their usefulness to humans (Diamond 114-119). The idea of farming rather than hunting and gathering soon spread to neighboring societies, as well as the seeds of domesticated crops, thus exposing the world to agriculture (Diamond 177). The spread of agriculture from the Fertile Crescent into Europe, Asia, and North Africa was much more rapid than the spread of agriculture in the rest of the world due to the geographical features of Eurasia. The majority of Eurasia's land mass lies on the east-to-west axis. Because of this, a large amount of Eurasia's land shares the same latitude, which means that it also shares the same day length, seasonal variations, temperatures, rainfall, diseases, and habitats (Diamond 183). The environmental similarities led to increased trade, of ideas and technologies, along the latitudinal line. This also meant that domesticated crops from the Fertile Crescent could be used in Europe. In contrast, the spread of people and ideas was much slower, or nonexistent, in Africa and the Americas because the majority of their land masses stretched from north to south (Diamond 185). For instance, the wheel was developed in southern Mexico but was never introduced in the nearby Andes because of the differences in latitude.

Similar to agriculture, the domestication of animals also played a vital role in the progression towards a technologically advanced society. After the discovery of agriculture and the subsequent shift towards fixed dwellings, societies began to domesticate livestock animals, instead of hunting wild game. They were now able to contribute to food production through meat, milk, fertilizer, and the pulling of plows to till the land. The domestication of animals also provided a new mode of transportation of goods and people, allowing societies to expand. Arguably one of the most important domestic animals, the horse, proved to be an invaluable military asset as the heavy armor of ancient times, leading to swift military victories over cultures without horses, such as the occupation of ancient Egypt by a group of Asiatic people known as the Hyksos. The domestication of animals did present an unforeseen problem for the societies that employed their use. New human diseases like smallpox, measles, and the flu developed from close proximity to domesticated animals. The diseases derived from animals ravaged human populations, due to the large density of inhabitants present in agricultural societies. Those that survived inevitably passed on their resistances to these new diseases, which led to a population mostly immune to their ill effects (Diamond 88-90). While in the short term the spread of disease was a drawback for European society, in the long term it proved to be an extremely important advantage.

Only 14 large animals over 100 pounds had been successfully domesticated before the twentieth century. The five most widespread and important domestic animals are the cow, sheep, goat, pig, and horse, all of which could be found in Europe in ancient times. While Eurasia was home to 13 of the eventually domesticated large mammals, South America was home to only one, and North America, Australia, and sub-Saharan Africa were home to none at all. This unequal distribution of the relatives of domestic animals is one of the important reasons why

Europeans, rather than peoples of other continents, were able to technologically advance faster than the rest of the world (Diamond 159-161).

Steel has played a major role in shaping the modern day world. The Europeans use of steel resulted in the imperialistic colonization and spread of European culture throughout most of the world. The Europeans were able to conquer most other civilizations with their superior weapons, as well as spread their culture through the use of ships and railroads, all of which would have been impossible without the development of steel. The dry environment of the Fertile Crescent meant that fire pits could be kept alight for days on end, thus producing the heat required to manipulate different metal ores. Through experimentation over thousands of years, techniques for forging metals were discovered and ultimately led to the Bronze Age, Iron Age, and eventually the smelting of steel as well. Other parts of the world were simply too damp to produce long burning fire pits with which to smelt metals. This geographical handicap left many societies in the Stone Age until the arrival of the Europeans, not due to lack of ability but to an insufficient environment (Diamond 259). The production of steel not only required the extreme temperatures of a long lasting fire, but the right raw materials as well. Europe was also lucky enough to have vast amounts of iron ore and the forests needed to keep their fires burning. However, Europeans were not the only people to develop smithing techniques. The Far East had also developed Iron and Bronze technologies but did not advance to the creation of steel because of a lack of competition among the Far Eastern societies. Europe's distinct environment led to political independence, economic competition and technological cooperation. Because of this political environment all the different communities and countries within Europe were constantly fighting for power and prestige, thus creating a technological arms race (PBS: Guns, Germs & Steel). Similarly, gun powder was originally developed in China, through the mixture of sulfur,

charcoal and saltpeter. It eventually reached Europe, due to the rapid spread of people and ideas along the latitudinal lines. It was there that it was refined and turned into a potent weapon of destruction by the competitive Europeans who were on the constant look out for new weapons to overcome their enemies (Diamond 247). Ultimately the development of steel and guns gave Europeans a distinct military advantage over the rest of the world, resulting in the imperialistic colonization of other civilizations by the Europeans.

The colonization of Africa by the Europeans was not due to superior genetics, but a result of a technologically advanced culture asserting its power against a region which was not well suited for technological growth and thus had a great disadvantage. Africa has a very diverse climate since the continent spans mostly north-to-south. This impeded the spread of food production methods since one tribe's techniques would not work for another tribe in a different part of Africa (Diamond 378). Even if Africa was geographically prime for technological growth, the diversity in languages prevented them from effectively communicating and sharing information with other African cultures---Africa has around 1,500 languages in total (Diamond 381). Since Africa has a dry climate, it was very difficult to cultivate large crops south of the equator. This along with their difficulties in domesticating native animals---even the few that were domesticated did not spread due to the geographical diversity caused by the north-south axis---made Africa a non-ideal region for technological growth (Diamond 400). Even though Europeans were able to conquer some of Africa, they could not control all of it and they could not spread modern technology throughout Africa for the same reasons the Africans were not able to develop and spread technology themselves. Therefore it was not genetics but geography that gave Europeans the advantage over the Africans.

As previously mentioned, food producing societies had an advantage over hunter-gatherer communities because they were able to support a denser population; which in turn helped fuel innovation, trade, and ultimately, technological growth. This would not have occurred, or not as quickly, had it not been for a system of writing since

[k]nowledge brings power. Hence writing brings power to modern societies, by making it possible to transmit knowledge with far greater accuracy and in far greater quantity and detail, from more distant lands and more remote times (Diamond 215).

It is true that some societies throughout history were able to create an empire without writing, but the consensus is that writing did play a major part in how modern civilization came to be. Although writing is important, it is also very difficult to create without outside sources of writing to guide one on the fundamentals or provide an example of a working system; and this is why there were only a handful of independent inventions of writing throughout history (Diamond 218). All other written languages came from copying or “blueprinting” other languages to create new forms which suit a certain society’s needs. This would suggest that in order for a society to develop a language they would either have to be one of the fortunate few who independently invented one, or be in close proximity to such a society or proxy society which had a writing system that could diffuse into their culture. Therefore geographically isolated or partial isolated areas were unlikely to develop any forms of writing which aided in political and social growth (Diamond 237). Overall, this analysis only explains the reason behind some cultures not developing writing systems and the technological deficit which became inevitable.

Although few societies had ideal geographical locations, good means of food production, and even written word, there was still another factor which allowed some peoples to reach a higher tier of technological advancement. Like the written word, some technology can

only develop in collaboration or through diffusion from another society. That is not to say one society cannot produce a new invention unaided, but rather to say a new invention needs a culturally diverse test bed in order to truly prosper---a perfect example being the invention of the wheel. Many early people did not see any use for the wheel and others praised its invention, but eventually, the less receptive peoples began using it for hauling materials and farming after it diffused into their society through nearby villages (Diamond 255). If a village was unreceptive to a technology and was unable to see its use from other villages, then there is a good possibility it would become a fad and ultimately be discarded. However, a technological fad can persist in an isolated society if it commands enough power, such as guns in Japan. Although the Japanese used guns and even improved upon them, they still were abandoned due to government action---which was only defensibly possible due to Japan's isolation (Diamond 257). Since distance from other advanced societies plays a large role in the acceptance and use of some of the world's best inventions, it would seem that technologically advanced societies were produced by luck more than anything else, especially after factoring in all of the other components---geography being a prime factor---which aided in early societies' march toward modern civilization.

The largest factors which contributed to the development of advanced societies are unquestionably geography and agriculture. Geography being the building block from which all of the other qualities needed for technological growth can be derived. The hunter-gatherers in some parts of the world were able to settle in one area due to the environment lending itself to food production. This led to the domestication of animals, specifically livestock, which then helped with transportation, farming, and the spread and then resistance to diseases. Geography also helped in the spread of technology, including food production techniques, the wheel, and the first writing systems. Writing was also essential in the development of political and economic

systems. Even the smelting of steel depended on geography since damp climates were unable to keep the fires burning long and hot enough to melt steel. Therefore, if an early society was located in a geographical location in which food production and travel were difficult, it was too damp for smithing, or the society was isolated, then technology did not blossom in that region not because the peoples were genetically inferior, but the natural and social environment was not well suited for technological growth. Cultures which developed in unfavorable geographical regions lagged behind in the advancement of technology and some never caught up to modern civilizations because of their isolation from neighboring technological societies which prevented the diffusion of inventions and other technologies.

Bibliography

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