

# THE HISTORY OF CIVILISATION AND THE INFLUENCE OF THE ENVIRONMENT

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Classical liberals and libertarians believe in equal rights for all races and nations, but there have always been some people who have objected to this on the grounds that all races are not equal in intelligence. Since the Second World War, this idea has been out of fashion, because of the memory of what the Nazis did in the name of racial superiority, but it has never completely gone away. It is well-known that some parts of the world became civilised much sooner than others, and some areas never achieved civilisation through their own efforts at all. To many people, it seems only logical to assume that this must be because Europeans and Asians have more innate ability than Africans, Red Indians and Australian Aborigines. Of course, they know that if they said so in public, they would be denounced as “racists”, but they cannot help thinking it in private. Instead of suppressing discussion of the subject, which is likely to arouse suspicions of a cover-up, it would be more effective to defend the idea of

racial equality by considering the environmental factors which may have influenced the development of civilisation in different parts of the world. That is what I have attempted to do in this essay. The discussion which follows is mainly based on Jared Diamond’s fascinating book *Guns, Germs and Steel* (Cape, London, 1997), which I would strongly recommend to anyone who wants to know more about this subject.

## AGRICULTURE: THE CRUCIAL FIRST STEP

The crucial first step from savagery to civilisation was the invention of agriculture. In some parts of the world, this happened much sooner than in others, because there were many more species of animals and plants which were suitable for domestication. The great majority of the world’s wild animals have proved to be unsuitable for one reason or another. For example, it is not economic to breed an animal for food if it grows too slowly, like the elephant, or needs an expensive diet, like all carnivores. A few carnivores, such as the dog, the cat and the ferret, have been domesticated for hunting or pest control, but the only societies which eat dogs do so either as a rare delicacy or because they have no other animals available. Another important factor is an animal’s temperament. There are many species which cannot be domesticated because they are either too fierce or too timid, even though closely related species have been domesticated. The horse, for example, was domesticated thousands of years ago, and so was the North African wild ass, which evolved into the donkey, but the Asian wild ass and all species of zebra have proved impossible to domesticate because of their habit of biting anyone within reach. Antelopes cannot be domesticated because they run in-



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stantly when threatened with danger, while sheep and goats, on the other hand, stand their ground. All species of deer behave like antelopes except the reindeer, the only species which has been farmed on a large scale. Some animals have never been domesticated because they are unwilling to mate in captivity. Of South America's two native wild camels, the guanaco evolved into the domestic llama and alpaca, but the vicuna has a long and elaborate mating ritual which it is reluctant to perform in a domestic environment. Finally, there is the problem of an animal's social behaviour. It is usually impossible to domesticate a species in which individuals or herds defend an exclusive territory against others of their own kind, the only exceptions being the cat and the ferret. If an animal lives in herds, it can easily be domesticated if there is a dominance hierarchy within the herd, because the human owner can take the place of the leader, but if there is no hierarchy, domestication is impossible. This explains why the Asian wild sheep known as the mouflon was domesticated, but not the North American bighorn sheep.

Plants also vary greatly in their suitability for farming. Many plants have edible fruits, leaves or roots, but a successful food crop needs to be fast-growing, produce a high yield from a given area of land, and be capable of being stored without perishing. It is also useful if a plant can reproduce vegetatively, from its roots, or by self-pollination, so that it can be bred selectively to increase the yield, and beneficial mutations are not lost in the breeding process. The first plants to be domesticated were small herbs such as cereals and pulses, which grow quickly because they do not waste much energy on producing woody stems. Tree crops, on the other hand, were not domesticated until much later, when farming was well-established, because they take several years to start yielding fruit. It is also significant that many of the first plants to be domesticated were annuals which were native to areas with a long dry season. These species grow to maturity within a year and produce seeds which are big enough and durable enough to survive dry conditions, meaning that the yield is high and the crop is suitable for storage.

### **THE CONSEQUENCES OF AGRICULTURE**

The most important advantage of agriculture over hunting and gathering is that it enables more people to live on a given area of land. Farmers can produce more food than they need for themselves, which means that the division of labour becomes possible. Food surpluses can be stored to feed specialists who do not produce food themselves, but develop new inventions such as writing and technology, which increase the output of wealth by enabling new knowledge to be recorded and applied. The larger the population is, the faster technology develops, because there are more potential inventors. This means that when a farming society comes into conflict with a society of hunter-gatherers, the farmers always have the advantage, because they outnumber the hunter-gatherers, and because their technology gives them superior weapons. In the long run, the farmers are likely to push the hunter-gatherers aside, or conquer and assimilate them, unless they are adaptable enough to take up farming themselves and

beat the enemy at their own game. Once a society has invented agriculture, it has taken a huge leap forward in the rise to civilisation, and its rivals may never catch up.

A more subtle consequence of agriculture is its effect on health. Many of the dangerous infectious diseases which threaten mankind, or used to threaten us, have actually evolved from diseases of livestock which mutated and spread to humans. For example, tuberculosis, smallpox and measles all evolved from diseases of cattle, while influenza came originally from pigs and ducks. This means that the more species of domestic animals a society has, the more diseases it is likely to suffer from, and the more chance the people will have to acquire immunity. Another reason why farmers suffer from more diseases than hunter-gatherers is that the denser population of farming societies enables diseases to spread faster. There are some diseases which cannot survive in a population below a certain size, because sooner or later everyone catches them and either dies or becomes immune. For example, measles cannot survive in a community of less than half a million people, unless there is an outside source of reinfection. This means that in a clash between farmers and hunter-gatherers, the farmers' diseases may be even more deadly than their weapons. If the hunter-gatherers have no immunity to a disease to which the farmers have become resistant, they may end up being wiped out without a fight.

### **EURASIA: THE MOST FAVOURED CONTINENT**

The world's first civilisations developed in Eurasia and the adjacent areas of North Africa because this region had more species of domesticable animals and plants than anywhere else in the world. Before the 20th Century, only fourteen species of animals weighing more than 100lb. were domesticated in the entire world, and they were all native to Eurasia or North Africa except the llama and its close relative the alpaca. Another of the region's advantages is that it includes the Mediterranean Sea, which is surrounded by the world's largest zone with a climate characterised by long, hot, dry summers and wet winters. As mentioned above, this type of climate favours the evolution of annual plants with large, edible, non-perishable seeds, so this zone was the source of many of the world's most important food crops.

The Eurasian land mass also has the advantage of being elongated from east to west. This meant that when an animal or plant had been domesticated, it could be passed on from one farmer to another for thousands of miles and still remain within the same climatic zone. There was no need to spend any time breeding new varieties which were adapted to different climates. If a species was first domesticated in just one part of Eurasia, it could soon spread to a much wider area, giving farmers a wider range of crops and livestock.

### **AFRICA: EURASIA'S POOR RELATION**

The Sahara Desert has always been a much more important obstacle to communication than the Mediterranean Sea. While North Africa followed the same course as Eurasia towards civilisation, the region south of the Sahara

took a very different path of its own. In sub-Saharan Africa, the invention of agriculture was hindered by a lack of suitable animals. Several kinds of plants were domesticated, but the only animal domesticated in the region was a bird, the guinea fowl. The spread of Eurasian livestock from North Africa into the rest of the continent was slowed down by geographical factors. Africa is elongated from north to south, which meant that farming had to spread across climatic zones, rather than along them. Cattle, sheep and goats reached the north edge of the Serengeti plains, in modern Tanzania, in the third millennium BC, but they did not spread further south until the first millennium BC, and they only reached South Africa after the birth of Christ. Horses were unknown south of the Sahara until the first millennium AD, and they were unknown south of the Equator until they were introduced by European colonists in modern times. A problem peculiar to Africa is that many areas are unsuitable for livestock because of the tsetse fly, which carries sleeping sickness. The absence of large domestic animals reduced the output of arable farming, because there was no source of power for ploughing, or manure for fertiliser.

The spread of crops into Africa also met with geographical obstacles. Wheat and barley, the staple cereals of the Mediterranean zone, could not be introduced into the region on the opposite side of the Sahara, because they need winter rainfall, and in the tropics the rain falls mainly in the summer. On the other hand, millet and sorghum, the staple grain crops of tropical Africa, could not spread into the Cape region of South Africa, because it has a Mediterranean type of climate, and they require summer rainfall. When the first Dutch settlers arrived at the Cape, in the 17th Century, it was still inhabited by nomadic herdsmen and hunter-gatherers who did not grow any crops. In many parts of Africa, one of the most important crops is now the banana, but it was unknown there until the first millennium AD. It was domesticated in Asia thousands of years earlier, but it could not reach Africa by land because the deserts of Arabia were in the way, and it was not until the Christian era that seaborne trade developed in the Indian Ocean.

The history of Africa also shows how the advance of civilisation can be held back by transport problems. As Rudyard Kipling once said, civilisation means transport. Science and technology develop fastest in those areas which not only have large populations themselves but are in communication with other well-populated areas, so that they have access to other sources of innovation. As Thomas Sowell has explained in Chapter 3 of his book *Conquests and Cultures* (Basic Books, New York, 1998), the obstacles to transport in Africa are probably the worst of any continent in the world. The cheapest form of transport by far is water transport, but in comparison with Europe and Asia, Africa has few good natural harbours, few navigable rivers, and large areas far from any kind of navigable water. Much of Africa consists of high plateaus with only a narrow coastal plain bordering them, so that the rivers have to descend steep escarpments to reach the sea, and navigation is interrupted by rapids and waterfalls. River navigation is also hindered by seasonal variations in the flow, largely because of the lack of high mountains

with snowfields which can maintain the flow during the dry season. As for land transport, the use of animals is impossible in large areas because of the presence of the tsetse fly, so until European colonists brought mechanisation, many parts of the continent had to depend on human porters. Other obstacles to land transport include the world's largest desert, the Sahara, and one of the world's largest areas of rain forest, in the Congo basin. The result of all these problems was that for thousands of years Africa suffered from cultural fragmentation. Very few large states were able to develop, and there was little opportunity for different regions to exchange new ideas.

### **AUSTRALIA: THE NON-STARTER**

In the 18th Century, when the first British settlers arrived in Australia, the Aborigines were still hunter-gatherers who did not practise any kind of agriculture at all. Pastoral farming was never invented independently in Australia because none of the native animals were domesticable. Very few of the native plants were suitable for farming either. In some areas, the Aborigines regularly harvested wild millet and yams, and they might eventually have domesticated them in a few thousand years, but Captain Cook got there first.

A few hundred miles north of Australia, there were thriving agricultural societies in the Indonesian islands, but farming never spread from Indonesia to Australia for climatic reasons. The Indonesians were aware of Australia's existence long before it was known to Europeans, and Indonesian fishermen regularly visited the north coast. They may have discovered it as early as 1500 BC, because according to the fossil evidence, that was when the dog, in the form of the dingo, first appeared there. However, an Indonesian colonisation of Australia would have meant moving from north to south, from one climatic zone to another. Northern Australia has a long dry season, and this proved to be too dry for the Indonesian type of agriculture. Further inland, the climate becomes completely arid, and the central deserts cut off any Indonesian settlers from the well-watered regions in the south-east and south-west, which now contain Australia's most productive farmlands.

The history of Australia since its discovery by Europeans makes an interesting contrast with events on the opposite side of the Indian Ocean. Today the Aborigines are a small minority who have been almost completely displaced by people of European origin. In South Africa, on the other hand, it is the Europeans who are in the minority, even though it was first settled by Europeans more than a hundred years earlier than Australia. The difference is explained by the effects of disease. When the first European settlers reached South Africa by sea, European diseases had already got there by land fifteen hundred years earlier, along with European livestock, and the natives had had time to become resistant. On the other hand, when the Aborigines first encountered European diseases, they had no immunity at all, and they were decimated. It has been estimated that their numbers declined by as much as 80%, and to this day they have still not recovered.

## THE AMERICAS: INDEPENDENT DEVELOPMENT WITH LIMITED RESOURCES

After the ancestors of the Red Indians crossed the Bering Straits from Asia at the end of the Ice Age, the Americas were cut off from the Old World for more than ten thousand years. By the time of Columbus's voyage, native civilisations had developed in Mexico and Peru, but they were much more backward than their European and Asian counterparts. They had discovered how to work copper, gold and silver, but not iron, they had no knowledge of gunpowder and no wheeled vehicles, and although the Aztecs and Mayas had invented writing, the Incas had not.

The slow development of civilisation in the Americas was due to the slow development of agriculture, which, as in Africa, was due to the limited resources which were available. Apart from the ubiquitous dog, the only animals which were domesticated were the llama and alpaca, the guinea pig, the turkey and the Muscovy duck. There were no animals capable of pulling a plough or powering machines for threshing, grinding or irrigation, and crop production was limited by a shortage of manure. Another significant disadvantage compared to the Old World was that there were no animals capable of carrying soldiers in warfare. As for plants, several pulses and root crops were domesticated, but the only important cereal, maize, presented farmers with a major problem, because its wild ancestor produced only a few small seeds in hard, inedible casings. Unlike Old World cereals, it took thousands of years of selective breeding to make it really suitable for cultivation.

The Americas also resemble Africa in being elongated from north to south, which meant that agriculture had to spread at right angles to the climatic zones. By the time of Columbus, it had still not reached some of the most fertile areas in the two continents, including the prairies and the Pacific coast of North America, the Argentinian pampas, and the central valley of Chile. The environmental barriers to agriculture included the vast area of rain forest in the tropics and the deserts of northern Mexico. The Isthmus of Panama always acted as a bottleneck to communication, since it was covered by some of the most impenetrable rain forest in the New World. Several species of plants got through it, but not the potato, which was domesticated in South America but was unknown north of Panama until introduced by Europeans. No domestic animals ever got through the isthmus at all. The turkey, for example, was domesticated in Central America but never reached South America, while the llama and alpaca, the guinea pig and Muscovy duck were domesticated in South America but never reached Central America. These geographical obstacles also hindered the spread of innovations in fields of activity other than farming. Writing and the wheel, for example, were both invented in Central America but never got as far as South America, and the Central American civilisations only used the wheel in toys, because they had no animals capable of pulling a vehicle. In fact, long-distance communications were so bad that the Aztec and Inca Empires were completely unaware of each other's existence until the Spanish conquest.

One of the most important consequences of the shortage of domestic animals was that the Indian peoples of the Americas proved to be just as vulnerable to Old World diseases as the Australian Aborigines. Smallpox, tuberculosis, influenza, measles, malaria, yellow fever and many other deadly diseases were unknown in the Americas until they were introduced from Europe and Africa after the time of Columbus, and they had catastrophic effects on people with no natural immunity. The total loss of life may have been as high as 95%. This explains why the Americas, like Australia, are now inhabited mainly by people of European descent.

## THE CULTURAL GEOGRAPHY OF THE MODERN WORLD

The effects of agriculture and disease together explain many of the most important features of the cultural geography of the modern world, including the backwardness of Africa and the existence of nations founded by Europeans in the Americas and Australia. An awareness of this should help to dispel the old myths about superior and inferior races, and it should give us grounds for cautious optimism about the possibility of solving some of the world's most intractable problems. For example, if Africa's problems are due to an inferior environment rather than racial inferiority, then we should not dismiss it as a hopeless case. If Africans have as much innate ability as Westerners, they should be capable of solving their problems themselves, without outside help, if they can change their culture.

A knowledge of the history of disease should also dispel a few fashionable modern myths about the alleged crimes committed by Europeans against the rest of mankind. The *Guardian*-reading intellectual elite, who are determined to blame Western civilisation for all the evil in the world, have often claimed that the European settlers in America and Australia committed "genocide" against the natives. In fact, the real killers were not European people but European microbes. Just to put things in perspective, Europe has suffered two major outbreaks of bubonic plague in the last two thousand years: the Plague of Justinian, in the 6th Century, and the even more destructive Black Death, which killed one in three of the population in the 14th Century. The Plague of Justinian is believed to have spread to Europe from East Africa via Egypt, while the Black Death came from Central Asia via the Crimea. Does that mean that we can accuse Africans and Asians of genocide against Europeans?

Of course, there are some aspects of cultural geography which cannot be explained in terms of farming and disease, such as the relationship between Europe and Asia, each of which has been the most advanced continent in the world at some stage in its history. Jared Diamond makes a few comments about this subject in *Guns, Germs and Steel*, but he does not discuss it in great depth, and I do not propose to deal with it in this pamphlet. However, his theories do shed a remarkable amount of new light on the environmental factors which have influenced the shape of today's world.