

CHAPTER 24

AN ALTERNATIVE EXPLANATION

Section 1 – Introduction

One thesis of this book is that the principal reason the inhabitants of Europe and China are more advanced in technology than the inhabitants of SSA (sub-Saharan Africa) is that, on average, they have higher intelligence than the Africans, and their higher intelligence is based — at least in part — on genetic factors. However, before accepting that thesis, it is sensible to consider alternative explanations for the superiority of European and Chinese culture and technology. Perhaps the most widely-accepted alternative explanation is the one given by Professor Jared Diamond in his well-known book *Guns, Germs, and Steel*.

Section 2 – Jared Diamond's hypothesis

Professor Diamond is eager to show there is no genetic component to the well-known gap in average IQ between whites and blacks, and in his book he attempts to explain how the Europeans became so much more advanced technologically than the inhabitants of SSA, the Western Hemisphere, Australia, and New Guinea despite the absence of any genetic superiority.

Near the beginning of his book, Dr. Diamond states that the notion that there are genetic factors which cause Europeans to be more intelligent (on average) than Australian aborigines is morally loathsome.¹ Surprisingly, though, within two pages of that statement, he himself expresses the view that as a result of natural selection the aborigines of the New Guinea highlands are probably genetically superior to Westerners in mental ability.²

However, in the remainder of his book, Dr. Diamond takes the position that all human groups are genetically equal in intelligence. He asserts that the comparative backwardness of the Western Hemisphere, SSA, and Australia in 1500 AD was entirely due to geographic factors. Those factors, he claims, had made it more difficult for those regions to develop agriculture, and their late start in agriculture then insured that they would also be behind in developing science and technology. Professor Diamond discusses three major geographic factors that greatly delayed the adoption of agriculture in those other regions:

1) *Flora*. Compared with Eurasia, the other regions had a dearth of edible plants that were suitable for domestication. For example, the wild ancestors of domestic wheat and barley grew in the Middle East, but they were not present in SSA, Australia, or the Western Hemisphere.

2) *Fauna*. Compared with Eurasia, the other regions had a dearth of large animals suitable for domestication. For example, the wild ancestors of domestic sheep, goats, and horses all lived in Eurasia 10,000 years ago, but they were not present in SSA, Australia, or the New World.

3) *Orientation of geographic axes*. Unlike Eurasia, which has an enormous geographic span in the east-west direction (much greater than its span from north to south), the geographic axes of the other regions are “tilted,” with relatively short east-west spans and relatively long north-south spans (see Map 24-1).

This last factor is important because most domesticated plants cannot readily be grown in regions of different climate, nor in regions having markedly different growing seasons. Therefore, although the use of such plants in agriculture can spread rapidly in the east-west direction, it cannot spread readily in the north-south direction.³ Dr. Diamond suggests that the same is true for livestock, and for the spread of inventions. As a result, the innovations made in different parts of Eurasia soon became used in other parts of the continent, whereas innovations made in different parts of the Western Hemisphere (or Africa, or Australia) did not easily spread to other parts of those regions.

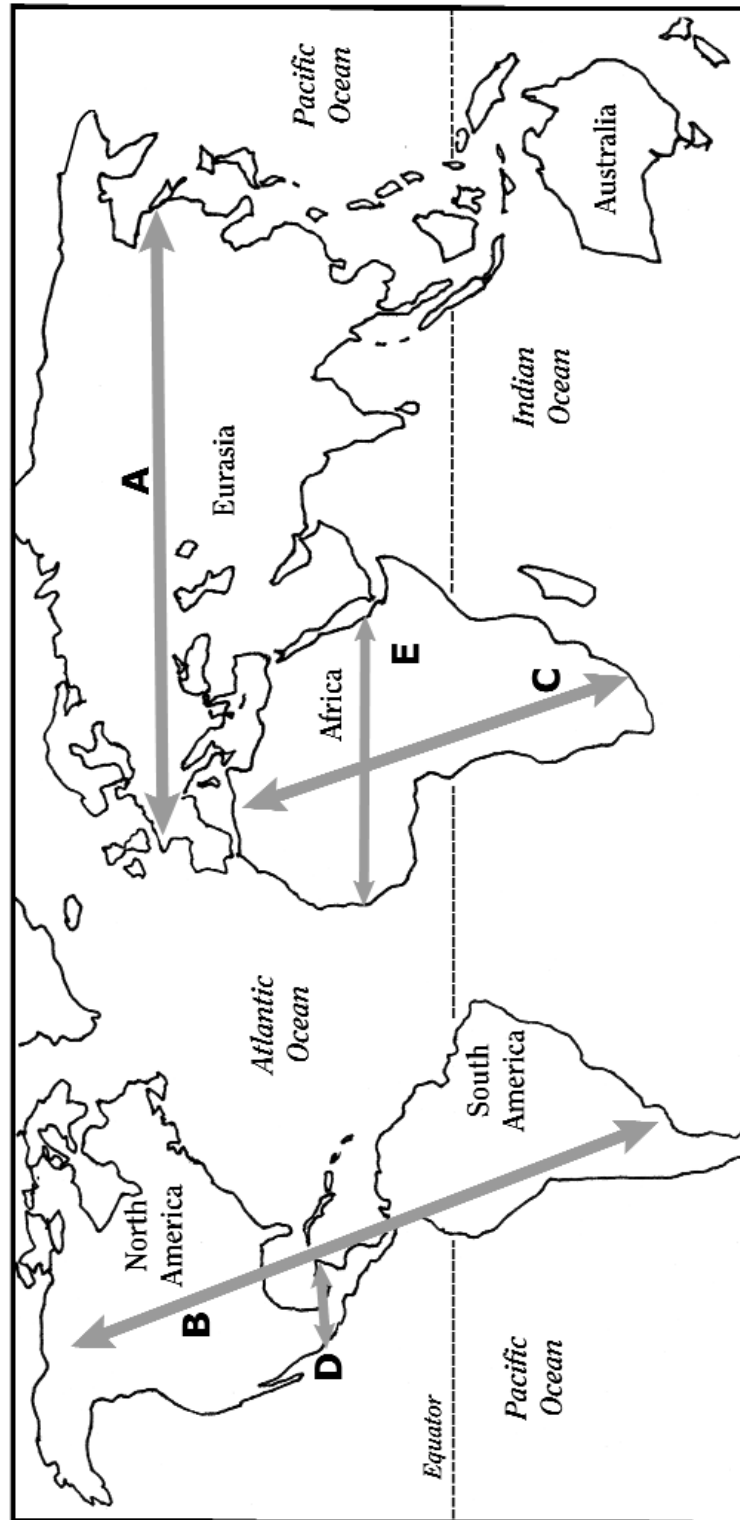
In Map 24-1, lines A, B, and C represent the major axes of Eurasia, the Americas, and Africa according to Dr. Diamond’s analysis. Line A, which represents the east-west span across Eurasia at latitude 50° N, is about 6200 miles long. (It appears longer, because a Mercator projection exaggerates E-W distances at high latitudes.) Lines D and E illustrate comparable E-W lines in Mesoamerica, and across Africa. (The longest possible E-W line in Africa — from Dakar in the West, to Cape Gwardafuy in Somalia — is only 4500 miles long.)

Section 3 – Critique: Comparison of data for SSA and Mesoamerica

There is certainly something to be said for Dr. Diamond’s thesis. Eurasia, and particularly the Middle East, *did* have a far greater supply of useful and easily domesticable plants and animals than any other region. It is also true that both Australia and the United States were badly lacking in such species. However, the facts do not support his theory when it is applied to a comparison between sub-Saharan Africa and Mesoamerica.

1) *Flora*. Dr. Diamond rightly stresses the importance of cereal crops in the rise of agriculture. The only useful wild cereal that grew in Mesoamerica was teosinte, the ancestor of corn. However, teosinte is not nearly as nutritious as wild wheat, and it was far less amenable to domestication. In contrast, sub-Saharan Africa possessed *five* useful cereal crops: sorghum, bulrush millet, finger millet, teff, and African rice.⁴ It seems, therefore, that SSA had an advantage in this regard. (SSA also had various

Map 24-1
Tilted Axes and E-W Expanses



useful non-cereal crops, including yams, cowpeas, watermelon, oil palm, and ground-nuts; but these were balanced by the availability in Mesoamerica of beans, squash, tomatoes, and sweet potatoes.)

2) *Fauna*. Few regions contain as many species of large animals as SSA, but Dr. Diamond insists that none of the wild species there are domesticable. For example, he states that zebras, although very similar to horses in anatomy, are hopelessly irascible, and points out that recent attempts to tame them have all failed. I find that example unconvincing. Wild horses were long considered to be untamable animals, as was the aurochs (the wild ancestor of domestic cattle), but both were domesticated in time. Until we have spent at least a few centuries trying to domesticate zebras, we should not rush to the conclusion that such attempts are hopeless.

However, even if it turns out that zebras are untamable, it still would not be true that Africa did not possess any potentially useful farm animals. The wild ancestor of domestic cattle — the most useful of all farm animals — was indigenous to North Africa,⁵ and domestic cattle were being used in the Sahara by 5.5 kya, probably earlier,⁶ and south of the Sahara by 5 kya.⁷ (The Sahara was much wetter several thousand years ago than it is now.⁸) In addition, domestic sheep and goats were introduced into Africa by 7.5 kya,⁹ and their use had spread south of the Sahara by 4 kya.

Mesoamerica, on the other hand, did not have a single large domesticable animal, since most of the megafauna in the Western Hemisphere had been killed off by the Paleo-Indians by 11 kya. As regards fauna, therefore, SSA had a great advantage over Mesoamerica.

3) *Orientation of geographic axes*. In Mesoamerica, the longest east-west span (from the eastern tip of Yucatán to Mazatlan, on the west coast of Mexico) is only 1300 miles. Contrast this with sub-Saharan Africa, where a vast stretch of savannah (the Sudan, situated between the Sahara and the tropical rainforest) stretches 3500 miles in an east-west direction, from the highlands of Ethiopia to Senegal. It is clear that transmission of technology and domesticates could — and repeatedly did — take place along the Sudan, and also across Ethiopia.

Furthermore, sub-Saharan Africa was not completely cut off from Eurasia, and some important aspects of Eurasian technology and culture did reach SSA. Techniques of pottery-making, bronze working, and ironworking reached SSA from the Middle East, as did the use of domesticated camels. (In addition, as already mentioned, domestic sheep and goats were introduced into SSA from the Middle East by 4 kya.) In contrast, prior to 1492, no Neolithic flora, fauna, or technology ever spread from the Old World to the Western Hemisphere.

We see, therefore, that the geographic factors mentioned by Jared Diamond strongly favored SSA over Mesoamerica. Using his criteria, civilization should have begun earlier in SSA than it did in Mesoamerica, and it should have progressed more there (prior to the European expansion of modern times) than it did in Mesoamerica.

In fact, though, by 1000 AD, Mesoamerica was *far* more advanced than SSA was, or ever had been. For example, Mesoamericans had originated writing on their own, had constructed many large stone structures, and had built large cities (rivaling any existing in Europe, and far larger than any in sub-Saharan Africa). Furthermore, the Mayan achievements in mathematics and astronomy dwarf any intellectual achievements in SSA.

We must therefore conclude that, although *Guns, Germs, and Steel* is an informative book, the obvious superiority of Mesoamerican technology to that of sub-Saharan Africa appears to be a fatal blow to the main arguments presented in it. In contrast, this book provides a simple explanation for that superiority.

Of course, even if Dr. Diamond had demonstrated that the backwardness of SSA could be completely explained by geographic factors, that would still not prove there is no genetic component to the observed difference in mean IQ between blacks and whites. Many other arguments were presented in chapter 16 for believing that that difference is due in part to genetic factors. At best, his argument would remove only one of the reasons for reaching that conclusion; the other arguments would remain, and are quite sufficient.

FOOTNOTES – CHAPTER 24

- 1) Diamond, Jared (1999), p. 19.
- 2) Diamond, Jared (1999), pp. 20-21. On p. 21 he says, “That is, in mental ability New Guineans are probably genetically superior to Westerners.”
- 3) Diamond, Jared (1999), Chapter 10.
- 4) (a) *Historical Atlas of the Ancient World* (1998), p. 1.16.
 (b) *DK Atlas of World History* (2001 edition), pp. 21 and 158.
 (c) *Past Worlds: Atlas of Archaeology* (2003 edition), pp. 78 and 118-119.
 (d) Diamond, Jared (1999), pp. 126-127.
- 5) Diamond, Jared (1999), p. 160.
- 6) (a) Cavalli-Sforza, et al. (1994), p. 161.
 (b) *DK Atlas of World History* (2001 edition), p. 158.
 (c) *Historical Atlas of the Ancient World* (1998), p. 1.16.
- 7) (a) *Historical Atlas of the Ancient World* (1998), p. 1.16.
 (b) *DK Atlas of World History* (2001 edition), p. 158.
- 8) Cavalli-Sforza, et al. (1994), p. 161. The period of maximum wetness was about 9 kya.
- 9) (a) *DK Atlas of World History* (2001 edition), p. 158.
 (b) *Historical Atlas of the Ancient World* (1998), p. 1.16.