

Geodeterminism: Truth or Illusion?

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Abstract

The paper is about geographical determinism (geodeterminism), allegedly a foundation of geopolitics. According to this doctrine, the development of society depends on the geographical environment. This paper is divided into three parts. The first part is devoted to an historical overview of geodeterminism and the difference between geodeterminism and geopolitics. The views of ancient Greek philosophers, Middle Eastern scholars, and mediaeval European thinkers are discussed. In the second part, geodeterminism is presented as a genuine phenomenon, and various arguments and examples are given to prove it. In contrast, the third part is devoted to reasoning, based on which geodeterminism can be perceived as an illusion. The last part is the conclusion, which summarises the topics discussed above and formulates some concluding remarks. The paper is framed within a methodological framework. It is based on qualitative research methods, which enabled an in-depth analysis of the information surrounding the research question. In particular, content analysis was used. The research relies on both primary and secondary sources. The paper is largely based on various books, articles, and studies that have made it possible to find an answer to the research question, which served to determine whether geodeterminism is true or is it just an illusion?

Keywords: Geodeterminism (Geographic determinism), Geopolitics, Geographical theory.

Introduction

At its most general definition, geographic determinism, or geodeterminism, is the doctrine that the natural environment is responsible for all human actions. The development of society depends on the natural environment. In other words, in a deterministic view of struggle and survival, people are not free to make their own choices, and their achievements must be explained as the result of natural conditions. [1] The development or backwardness of this or that country is determined by the geographical conditions in which it is located. According to geodeterminists, the landscape mosaic is a peculiar matrix when humanity is predetermined. [2]

Although deterministic arguments have always been contested, they have long dominated and provided a means of accounting for and hierarchically ranking cultural, political, and economic differences between people and places.

Historical roots of geodeterminism

It should be noted that geographical determinism has deep roots. It originated in ancient Greece and then spread throughout Europe and the world. As far back as the ancient Greek philosophers Hippocrates and Polybius, they thought that people who live in hot climates are sluggish. This is the reason why they cannot form a developed society. Furthermore, as for the people living in cold climates, all their energy is directed towards maintaining their physical existence, so they cannot create anything of value either. The formation of civilizations is possible only in moderate climatic conditions, where a favourable natural environment is present.

Herodotus strongly supported the idea that "all history must be treated geographically, and all geography must be treated historically." This idea from Herodotus was an implicit recognition. He observed that geography was the physical background and arena where historical events occurred.

The visions of Plato and Aristotle, who were the first to connect the geographical environment with politics, are worth noting. Plato believed the political regime suitable for mountainous countries is a democracy, and autocracy is suitable for states with plain terrain. According to Aristotle, a republic is the best form of government for small countries. For large countries, it is a monarchy; for vast countries, it is an empire (tyranny).

As for the Middle Ages, during this period, geodeterminism was overshadowed by religious doctrines that sought a religious explanation for the facts, but after some time, Arab scientists appeared who extended their views to the geodeterministic ideas proposed by the Ancient Greeks. Al-Masud

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from the Arab world deserves a special mention. He proposed a new world division into 14 climatic regions in 985. He also described human activities in hot and temperate climates, indicating the importance of climate to human activities. [3]

Ibn Battuta and Ibn Khaldun must be singled out from the Arab world as well. Ibn Khaldun was the last Arab scholar contributing to the mediaeval deterministic concept. In 1377, he wrote the book "Muqaddimah", which begins with a discussion of man's physical environment and influence, as well as the characteristics of man related to his culture or lifestyle rather than the environment [4].

Geodeterminism was gaining ground in Europe as well. The 16th-century French scientist Jean Bodin, the founder of the state sovereignty concept, provides essential information about geographical determinism. According to Jean Bodin, the geographical environment influences people's characters. He claimed that the best conditions for the existence of people are created in the temperate zone, between 40 and 50 degrees of north latitude. It is precise because strong states were formed and developed here, and the inhabitants of this region were distinguished by their outstanding military leadership, trade, etc. Therefore, the strength of individual states depends on the influence of the surrounding belt [5].

The most significant representative of geographical determinism, Frenchman Montesquieu, should be noted. In 1748, the French educator published the fruit of 30 years of his work, the well-known "Spirit of the Laws" (*De l'esprit des lois*), whose 17 books were devoted to the influence of climate, the customs of individual peoples, and the forms of state organisation.

We should also remember that geographical determinism was the basis for geopolitics. The term geopolitics was introduced at the beginning of the 20th century by the Swedish scientist Rudolf Kjellén. However, geopolitics as a scientific concept dates back to the 19th century, when Friedrich Ratzel and Rudolf Kjellén published their works. It should be noted that geopolitics did not emerge on bare soil, and geographical determinism is often considered its predecessor [6]. Nevertheless, is geographical determinism geopolitics?

We will see many similarities if we start to research and analyze the issue by comparing geographical determinism and classical geopolitics. Classical geopolitical thinkers such as Halford Mackinder and Friedrich Ratzel saw geography as a critical factor determining the rise and fall of great powers throughout history. Mackinder, for example, argued that the world was divided into two central regions: the Eurasian "Heartland", dominated by Russia, and the "Rimland" around it, controlled by various naval powers such as Britain and the United States. He believed that a state that controlled the Heartland would have a natural advantage in dominating the rest of the world due to its central location and resources [7].

As for Ratzel, he considered the state to be a living organism. According to his thinking, like every living organism, the state is born, grows, reaches adulthood, and then dies (ceases to exist). By the state's growth, he meant the territorial expansion of the state at the expense of small and weak neighbouring political entities. States, like living beings, must create a living environment. Therefore, territorial expansion and conquest wars are permissible and logical events [8]. According to classical geopolitics, it turns out that any political event, for example, war, is caused by natural-geographical laws and not by the decisions of political leaders. In other words, classical geopolitics practically ignores the idea that space is a social construction [9].

Nowadays, being guided by classical geopolitics is wrong because we face a different geopolitical reality. That is why modern geopolitics was formed. Modern geopolitics has evolved in response to the changing global landscape and the emergence of new geopolitical actors and challenges. Modern geopolitics is characterised by a broader range of analysis, including the role of non-state actors such as multinational corporations, NGOs, and terrorist groups, and the impact of globalisation, climate change, and technological advances on the international system. Modern geopolitics also includes more diverse theoretical perspectives, including feminist, postcolonial, and critical approaches that challenge classical geopolitics' traditional assumptions and power structures [10].

The main difference between classical and modern geopolitics is their focus and theoretical orientation; classical geopolitics emphasises state power and territorial control. In contrast, modern geopolitics emphasises the complexity and interconnectedness of the global system. Geopolitics is not the same as geographic determinism. However, it is based on the assumption that geography determines the limits and opportunities in international politics: states can realise their geopolitical opportunities or

become victims of their geopolitical situation. One of the main objectives of grand strategy is to exploit one's advantage and the weaknesses of one's opponent.

Finally, when the historical roots of geodeterminism and its independence from geopolitics have already been clearly identified, we can discuss the truth of geographic determinism itself, which will be proven with specific examples.

Geodeterminism– truth

Nicholas Spykman once wrote that "ministers come and go, even dictators die, but mountain ranges stand unperturbed" [11]. Because of their persistence, Spykman considered geographical conditions—the physical realities that state face—crucial to international relations and politics." Geography does not argue; it just is" [12]. If we start the study of the issue from the deep past, we will be sure that the geographical environment and location have always been given priority. This geographical factor has changed over time. For example, rivers were the most critical geographical factor for ancient civilizations such as ancient Egypt, Mesopotamia, India, and China. Only those civilizations that arose near rivers were often flourishing [13].

After the era of river civilizations, there was the age of maritime civilizations, when those countries with access to the sea reached the highest point of advancement. Greece, Carthage, Rome, Byzantium - these great empires must thank their geographical location for going down in history as the greatest expansionists. Furthermore, as for great geographical discoveries, those countries with a favourable location towards the ocean were promoted, the creation of the colonial empires of Portugal, Spain, England and others and the making of the most important geographical discoveries for humankind was ensured by the geographical factor.

American naval strategist Alfred T. Mahan had interesting opinions on the strength of naval states. He wrote the book "The Influence of Sea Power upon History" (1890), arguing that national prosperity and power depended on control of the world's sea lanes. In his opinion, only that country can become a leader in political and economic life, which occupies a leading position at sea: "Whoever rules the waves rules the world "[14].

Climate should also become an advantage for the states. When discussing geographical advantages, it is impossible to leave out Russia, which has been saved by the climate more than once. During the Second World War, the cold Russian winter had disastrous results for Nazi Germany. The lack of frost-resistant military equipment and appropriate clothing caused the Wehrmacht to fail. These and many other historical examples show that geography is crucial in the fight against the adversary.

In addition, geographical location can also affect the economic well-being of a country. For example, we can consider the Gulf countries (Saudi Arabia, Iran, Iraq, Kuwait, the United Arab Emirates, and Qatar - these countries have the largest oil reserves in the region), whose economic development is wholly based on the oil extracted from the Persian Gulf (in case of Qatar instead of oil prevails gas). Although the share of oil supplied from the Middle East in the world market has somewhat decreased in recent years, as new deposits have been discovered (in Venezuela, Canada, Angola, Kazakhstan, etc.), the Middle East still holds more than half of the world's oil reserves, at the same time, it is of higher quality. Table 1 shows the oil reserves and the share of their extraction worldwide. It should be noted that the revenue produced from the oil extracted and exported by the Gulf countries accounts for more than 50% of the economies of these countries [15].

Table 1. Oil reserves and production of the Gulf countries.²

Countries	Oil reserves (billion tons) 2020	Share of world oil reserves (%) 2020	Oil production (Million metric tons) 2020	Share of world oil production (%) 2020
Saudi Arabia	40,9	17,2	519,6	12.5
Iran	21,7	9,1	142,7	3.4

² Source: BP, Statistical Review of World energy, 2021 <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2021-full-report.pdf>

Iraq	19,6	8,4	202,0	4.9
Kuwait	14,0	5,9	130,1	3.1
The United Arab Emirates	13,0	5,6	165,6	4.0
Qatar	2,6	1,5	75,9	1.8
Oman	0,7	0,3	46,1	1.1

The success and prosperity of countries depend on the climatic zone in which they are located. If we draw a map of the wealthiest economies, we can see that almost all the rich countries are in non-tropical zones (with the exception of Hong Kong and Singapore). Countries far from the equator have better economies than countries around them.

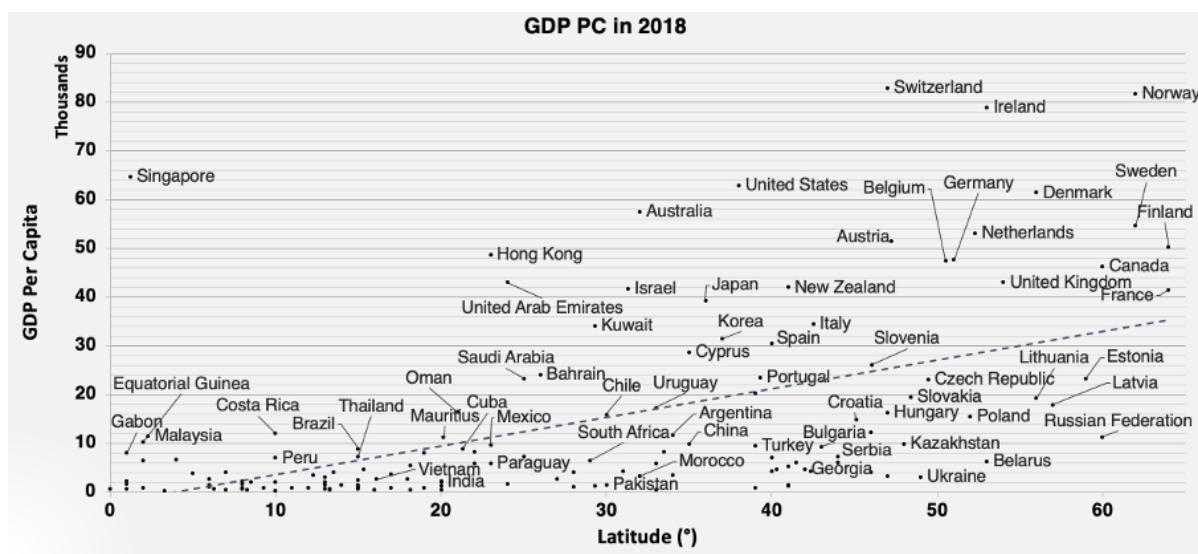


Figure 1. GDP per capita (GDP PC) for each country plotted as a function of its geographic latitude.

The analysis is done based on the climatic zones shown in Figure 1. The tropic zone is the zone between the Tropic of Capricorn and the Tropic of Cancer (between 24°N and 24°S). Zones located between 24°N and 40°N and between 24°S and 40°S form the subtropics, and zones located at latitudes greater than 40°N form the temperate zone. These three zones each share one-third of the Earth's surface (the tropical zone is 35% of the world's surface, the subtropical zone is 33% of the world's surface, and the temperate zone is 32% of the world's surface). Subsequently, for each country, GDP, GDP per capita (GDP PC), population, surface area, and geographic latitude were extracted from the World Data Bank. Depending on its latitude, each country is assigned a climatic zone. Only countries with a population of more than 1 million are analyzed. The data used is from 2018.

The surface of the world is almost evenly distributed between different climatic zones. However, 48% of the world's population is located in the tropics, but less than 15% of the world's GDP is generated from it. Almost 60% of the world's GDP is generated in the subtropics. According to World Bank data, except for Singapore (\$64,580 per capita GDP) and Hong Kong (\$48,675 per capita GDP), no countries in the tropics have a per capita GDP above \$20,000. In a deeper analysis, we note that there is a big difference between countries with access to sea transport and countries surrounded by land in the tropics. Those both tropical and landlocked are among the poorest economies in the world, such as the Central African Republic, Zimbabwe, Bolivia, Niger, Zambia, etc.

This difference between the north and south is also observed on the continents. In Latin America, the correlation between latitude and GDP PC is undisputed. Argentina, Uruguay, and Chile have the most southerly coordinates and the region's highest GDP per capita.

The same thing happens when we consider the African continent. Although the entire continent has historically been associated with the poorest area on Earth, the wealthiest countries are located at its southern and northern latitudes: South Africa and the Maghreb, two zones located in the subtropical parts of Africa.

European countries are shown as the graph descends to higher degrees of latitude (45° to 65°). Switzerland wins the race with the highest GDP PC (Luxembourg has a higher GDP PC but is not included in this analysis due to its small population) [16].

Assessing and analyzing the economic situation of countries in different climate zones allows us to believe in geographical determinism, which undoubtedly affects the development or underdevelopment of countries and societies, their financial promotion or backwardness. Nevertheless, it is also noteworthy that in the 21st century, in the era of globalization, one can overcome geographical factors, be it climate, natural resources or others and transform the environment to get the most out of it.

Geodeterminism – illusion

The territory, climate, resources, landscape and soil layer affect social development because people use various natural resources to produce material goods. The broader the scope of their economic activity, the more actively they use these resources. As a result, the sphere of direct interaction between people and nature is undergoing changes and expansion, which means that the role of the geographical environment in social life is increasing.

Although primitive people mainly used living resources (plants and animals) and made work tools from natural resources (stone and wood), in the later stages of historical development, the importance of mineral and energy resources increased, and the geography of human activity expanded dramatically. At the same time, the difficulty of work was constantly increasing due to geographical factors. A man had to exist in a friendly environment and harsh, life-threatening natural conditions.

Thus, the temperate climate, fertile soil, and optimal moisture allowed abundant harvests with relatively low labour costs. Before the 21st century, man's economic and social condition was more dependent on the natural environment than now, when humankind's economic and technological capabilities are higher.

Today, when humanity is approaching the highest point of development, its economic growth collides with the natural limits of the geographical environment, which is very limited in size and resources. Studies have shown that the number of raw materials consumed in the 21st century is equal to that consumed throughout history [17]. If the economic growth rate is the same in the coming decades, industrial production may increase two to three times, leading to additional demand for natural resources. It turns out that man himself creates the environment in which he lives. This means more roads, railways, canals, various constructions, etc. The category of people who deny the existence of geographical determinism believes that, at present, man is the leading figure in changing the geographical environment and not the other way around.

Nowadays, man completely transforms the environment for his benefit, although in some cases, we may not even realize that what is good now may be wrong in the future. Around 400 BCE, Plato discussed soil erosion around Athens and lamented that the once fertile area was left without soil. Human influence on the physical environment causes the latter to change. However, the main thing is that if these changes are not calculated in advance, their effect can be damaging for the people themselves [18].

Criticism of geodeterminism and the opinion that it is only a theory, and practically an illusion, is not new. According to Martin Glassner, this had to do with the fact that experiments and evidence never supported determinism. Hence, mild criticism from the 1920s became more intense and severe in the late 1930s and 1950s, and the term "determinism" could be said to have acquired an almost insulting and derogatory meaning. Therefore, geographical determinism, widespread before the mid-20th century, became insignificant in academic geographical studies. The biggest reason for this change is the increase in humans' constructive and alternative power over the natural environment through the technologies they have developed [19].

The fact that geographical determinism is not justified and man can overcome environmental factors is clearly seen in the example of Japan. Japan has very few mineral deposits and largely depends on

imports to meet demand. They succeeded and built a thriving economy based on technological expertise and innovative culture. Japan also refutes the basic thesis of the Heckscher-Ohlin theory, according to which countries are oriented to produce those products in which they have a comparative advantage [20].

However, despite the above, are we still prisoners of geography? Although geography can influence a country's political and economic trajectory, it is not the only factor determining its success or failure. A country's culture, political system and human capital also play an essential role in determining its destiny.

Therefore, while geography may be a constraint or an opportunity, it is not necessarily deterministic. People and nations can take steps to overcome geographic limitations, so geography is not destiny, and the prescription that the strong stay strong and the weak are doomed to be forever weak is false. Geography is not "fixed," as Kaplan writes, but unstable.[21]

Thus, it is crucial to recognize that physical geography is not fixed. Technology advancements such as air travel and the Internet have made distance and physical barriers less critical. Therefore, technological progress or human intervention can overcome the complexity of this or that landscape in which societies will have the opportunity to develop.

Conclusion

In conclusion, presenting geographic determinism as truth or illusion is wrong. Many examples have confirmed the truth of geographical determinism. At the beginning of the work, the purpose of analysing the views of the geodeterminism theoretical school were to convince the reader of the validity of this theory.

However, on the other hand, we must emphasize that the proponents of geographical determinism needed to understand human capabilities and adequately see the influence of the geographical environment in all aspects of public life. Their goal was to explain the level of human development by environmental conditions. The followers of these doctrines were partly right, based on the fact that nature can significantly influence man, but not all aspects of life can be controlled by nature. It is impossible that only nature forms a person or, on the contrary, only a person - nature.

Based on inventions and knowledge, technological progress and modern society began to influence and change natural factors more intensively. This was unimaginable for geographical determinists of the 19th century, so in this case, their criticism will not be justified.

In the end, geodeterminism is not at all a field of illusion. Abundant practical examples confirm it, but in the 21st century, it is clear that man appears as a transformer of the geographical environment. However, an approach that considers the possibilities of human transformation of the earth and recognizes human influence on the earth could only be formed by passing through certain stages, one of which is geographical determinism. We could not immediately recognize the power of man, it was necessary to slowly conclude other theories, according to which the main actors on earth are people, and they can even change the natural environment.

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