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Determinism in Geography

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1. Introduction

- In the history of geographical thinking, human – nature dialogue has been studied and analyzed from a number of different perspectives and views. The first amongst these approaches to deliberate on the human-nature relationship was determinism. In the words of Platt (1948) determinism, refers to the idea that everything in human life is caused inevitably by previous events or conditions. The primary initial source of determinists for an explanation was the physical environment, and the theoretical order was centered on the belief that the human activity was controlled by the parameters of the environment which was their habitat. Determinism is one of the most important philosophies, which continued in one form or other till World War II. In the context of this paradigm, it is believed that due to the difference in the natural environment, the variations in human behaviour in different parts of the world can be described. The spirit of deterministic ideology is that the level of development of history, culture, lifestyle and social group or nation is solely governed by the physical components of the environment at any scale.
- Determinists generally consider humans as a passive agent on whom physical factors are working continuously and thus determine their approach and decision-making process. In short, the determinists believe that most human activities can be explained as a response to the natural environment.

2. The Path of Determinism in Geography

- To understand determinism and why it became an ideological pariah in human geography, it is imperative to consider its historical context.
- In the context of the effect of natural conditions, the first attempt was made by Greek and Roman scholars explaining the physical characteristics and character traits of different people and their culture. At that time this effort was not contained only among geographers rather included scholars from different fields like the doctor **Hippocrates**, philosopher **Aristotle**, and Historians **Thucydides**, **Polybius**, and **Herodotus**. In the Greco-Roman era, regional studies were closely tied with the study of history; Thucydides and Polybius saw Athens's natural conditions and geographical position as factors for its greatness. For example, **Aristotle** explained the difference between Northern Europe and Asian people in the context of climate causes, while explaining the greatness and greatness of Rome, while mentioning similar incidents of **Strabo**.

- Strabo argued that the cold weather in Europe was the reason for their bravery. Aristotle thought that people living in hot weather in Asia were wise but there was a lack of soul and therefore time to time subjected to slavery. Because humans often consider their home as the best place, it is not surprising that Aristotle believed that the best combination of all possible worlds was in the centre of space, Greece (Glacon, 1967). Aristotle strongly advocated the progress of some countries is the result of their favorable environmental conditions.
- In the Middle Ages, **Montesquieu** explained that in cold weather people are less physically strong, more courageous, clear, less susceptible and less cunning than those in hot weather. He quotes that people in hot weather are terrible, weak in body, dull and inactive. Deterministic approach dominated the writings of Arab scholars. They divided the world into seven terrestrial zones on the basis of climate and highlighted the physical and cultural characteristics of the castes and castes of these regions. **Al-Baruni, Al-Masudi, Ibn Hawkal, Al-Idrisi** and **Ibn Khaldun** attempted to correlate the environment with human activities and living conditions within the conceptual domain of determinism.
- In the eighteenth century, historian **George Tatham**, also explained the differences among the people, in relation to the differences between the countries in which they lived. **Kant** was also a determinant who had said that people of New-Holland (East Indies) kept half-closed eyes and till they did not touch their back, they would not see their head at any distance without bending. **Thomas Malthus** was a scientific determinant (1766-1834) he not only emphasized the effect of different environments but also emphasized the boundaries that were imposed on social milieu because of these different environments.
- Deterministic reasoning continued in the 19th century when geography itself was related to other sciences. **Carl Ritter**, a German geographer adopted an anti-human approach and laid the philosophical base of determinism in geography. Ritter tried to make a difference in the physical constitution of the body, body, and health of men living in the different physical environment. Many of his students considered geography as "*a study of the relationship between people's density and the nature of their land*". Many geographers of their school had declared that their main task was to identify the influence of physical cultural geographical conditions and the political fortunes of residents of any area in both East and present. **Alexander von Humboldt**, one of the founders of 'Modern Geography' and a contemporary of Ritter, also said that the life of the residents of a hill country is different from those in the plains.
- In the latter part of the 19th century and early decades of the 20th century, the scientific environment was dominated by the views of **Darwin** and the acceptance of Newton's cause and effect relations. The origins of scientific determinism are in the work of Charles Darwin, whose original book *The Origin of Species* (1859) influenced many geographers. The influence of evolutionary biology on the development of modern geographic thought is now widely accepted. Stoddart (1966) argues that Darwin's biology played the crucial role in establishing the human's place in nature,

making possible the very development of geography as a science. The organismic analogy overcame the methodological problems inherent in the study of human-environment relations, the dualism between natural and human phenomena (Stoddart 1967).

- At the end of the 20th century, in American geography, the prevalent view that well fitted into the intellectual environment was the doctrine of determinism. Most of these were influenced by Darwin's ideas which were further developed by **William Morris Davis** during the cycle of erosion model. The primary concern was with documenting the control or influence of the environment on human society.
- **Friedrich Ratzel**, the founder of 'new' determinism, supplemented the 'classical' geographical determinism with the elements of 'Social Darwinism' and developed the state's theory as an organism. He believed in the existence of a qualification and saw the 'man' as the end product of development - a development which was natural selection of type according to the ability to adjust itself to the physical environment of the environment. He along with his disciple **Ellen Churchill Semple** became the most vocal expression of the deterministic approach in geography.
- Semple in her book *Influences of Geographical Environment (1911)* writes: *Man is a product of the surface of the Earth; this book had a widespread, long-lasting use in geographic education (Wright 1966). She dominated the environmentalist period of the discipline in the early twentieth century (Hartshorne 1939) and "trained a large proportion of those who became leaders of the profession during the period between the two World Wars" (James, Bladen and Karan 1983). Her essential scientific position was as follows: 'in every problem of history, there are two main factors, variously stated as heredity and environment, man and his geographic conditions, the internal forces of race and the external forces of habitat. Now the geographic element in the long history of human development has been operating strongly and operating persistently. Herein lies its importance. It is a stable force. It never sleeps. This natural environment, this physical basis of history, is for all intents and purposes immutable in comparison with the other factor in the problem-shifting, plastic, progressive, retrogressive man'* (Semple 1911).
- Her methodological statement cannot be questioned as at one time she points out that the influence of climate on man both as a direct and indirect effect cannot be questioned. She further elaborates that man was a passive subject who bears direct environmental influence at early stages of development. As they became more active, the indirect influences that mold's his mind and character through the medium of his economic and social life became more important. Through her writings, she explained national superiority in the new terms of natural "science," by providing an environmental version of "scientific racism" (Peet, 1985). The doctrine was further established by **Ellsworth Huntington** and **Griffith Taylor**. Huntington in his book *'The Principles of Human Geography'* (1945) and articles on climate and civilization demonstrated man's preference for ethnic-type structures and environmentalist explanations. However, he repeatedly repeated the importance of a genetic constitution and threw his weight behind various genetic enterprises (Spate, 1968).

He took the most decisive step since the time of Hippocrates and decided to make some results in the thinking of environmental causes.

- Taylor (1880-1963) was more cautious in relating man and environment. He believed that the environment has set the limits of human development. Their determinism was compared to the traffic control system, which set the rate, but did not give the direction of progress, which came to be known as *Neo-determinism* or *Stop and Go Determinism*. He states that man is able to speed, slow or stop the speed of any country's (regional) development. But he should not be, if he is intelligent, departing from the instructions according to the natural environment. He (man) is like a traffic controller in a big city, which changes the rate but does not give the direction of progress.
- In later year's geographers Mackinder, Chisholm, Davis, Bowman, Robert Mill, Geddes, Sauer, Hebertson, Taylor etc., explained the progress of society with a deterministic approach. Many scholars have clearly made it clear that climate has affected the soil's physical properties, which ultimately determines the crop pattern, which depends on the habits, function, and behaviour of the residents' diet. The determinists over the years had assured that there is a great impact of the physical features of the location of the people in relation to the mountains and plains at the level of their life and its level of development.
- Surprisingly scholars were not adhered to this paradigm because of its power of scientific persuasion. Rather they were trying to explain the new "scientific" terms of environmental causation within the ambit of geographical thinking - hence the focus on geographic determinants of society and history. But it had its limitations; its failure to realize the reflective differences between human beings and the rest of nature. Man through his social environment and productive capacity has the ability of development. Moreover, human consciousness makes this process to be self-directed; the result is a confrontation between natural determination and social determination.
- To include human social science, the natural theory needs to be amended. The organismic analogy on which the entire epitome of determinism was erected proved incapable of providing the basis for such a human-oriented theory, yet the analogy persisted because it proved a convenient methodological tool in legitimation theory.

3. Criticisms

- After World War II, this philosophy was vehemently criticized in the United States, UK, Canada and many other countries. Geographers observed that this approach exaggerated the active role of nature while interpreting human history. The determinists only consider humans capable of being adapted but man's efforts reveal many facts which the forces of the environment cannot explain. The does do not only become socially dysfunctional but was also subjected to an academic, theoretical critique. Barrows (1923) initiated a meek criticism from within the environmentalist paradigm where he argues that the relations between man and environment should

be seen from the standpoint of human adjustment as this was "more likely to result in the recognition and proper valuation of all the factors involved, and especially to minimize the danger of assigning to the environmental factors a determinative influence which they do not exert."

- Sauer (1963) had a stronger reservation where he states that a transposition of divine law into omnipotent natural law had caused the "*eager adherents of the faith of causation*" to sacrifice their earlier concerns in the name of a "*rigorous dogma of naturalistic cosmology, most notably in American physiography and anthropogeography*". As he later added, "*natural law does not apply to social groups*" (Sauer 1963); instead what man did in an area involves the active agency of culture that shapes of the landscape. Sauer's critique played the internal role in diminishing the place of determinism as the hegemonic theory of geography and initiated redefinition as a "social science, concerned with areal differentiation.
- Now the question arises that did Sauer provided a valid alternative theoretical base to the geographical thinking. Peet (1985) states that the cultural geography of Blache and Sauer failed to establish a comprehensive theory within the discipline. In the 1930s, 1940s, and 1950s geography drifted towards a regional perspective as determinism was being critiqued without being effectively replaced. The chorological concept logically implies that relationships do not define the field. Whatever be the goal of the geographer, he should not be limited to or prejudiced against any particular technique or method. Literary description and levels of human insight are undoubtedly required, but in Hartshorne's (1939) words the geographer must analyze the relationships of earthly features, "regardless of whether these interrelations can be described in terms of 'natural laws' or 'social laws.' Therefore, determinism has not retreated from geography; rather, a number of deterministic systems have been evolved to assist the interpretation of spatial patterns, and have frequently been compressed into mathematical formulae. There is sufficient room for analysis of both physical and cultural factors, quantitative laws and artistic synthesis. Determinism was redefined, refined, reviewed, and redirected, but never completely dislodged.

4. Conclusions:

- To conclude, we have to answer a question that why, after years of scientific criticism determinism as a viable scientific approach appears to live on? The most simplistic answer would be that the alternatives to determinism were less than satisfactory. Though there were potential replacements for determinism in the form of *environmentalism, possibilism, probabilism, cultural ecology, and chorology*. Among these, the most prominent were *possibilism* and *probabilism*, each of which presumed that humans were free agents who made choices from the innumerable factors available in the environment (Hartshorne, 1966).
- Secondly, beliefs consistent with determinism continued to be as widely accepted as understandable ways of explaining complex and variable factors that underscored various social and cultural phenomena. Although, modern science viewed traditional environmental determinism as overly simplistic, teleological, and even racist, there have to be reasons why the public accepted deterministic explanations for complex

social phenomena.

- Thirdly, in the words of Carter (1964), although geographers have turned away from environmentalism to a more balanced view, allied fields of knowledge are all too often still following along in the deterministic paths marked out fifty years ago. When history, economics, and political science, even on the college level, refer to geographic factors, all too often they take a strong physical environmental determinist view; geography cannot simply overlook it.
- Interestingly it also became clear that determinists were in agreement at two points. Firstly no one ever stated that humans did not have the ability to choose from among the alternatives offered in the environment (James and Martin, 1981). Secondly, nor was there ever any significant argument that no other factors were at play in the development of human societies. In fact, no interpretation in the history of geography ever came close to the rigorous environmental determinism (Beck, 1985).

The Possibilistic Perspective

- The doctrine of possibilism tries to explain the relationship of a human being with the environment in a different way; it puts human at a higher level and regards it as an active agent. It is a principle which claims that environment provides opportunities and man being an economic man chooses from those possibilities. Febvre (1932) in 'A Geographical Introduction to History' stated 'there are no necessities, but everywhere possibilities; and man, as the master of these possibilities, is the judge of their users'.
- The roots of possibilism can be traced back to the works of Plato, who is considered the master of deductive reasoning. Though his idea went into gloom for hundreds of years; the contrasting doctrine of determinism continued to grow and flourished. It got support in the writings of French scholar of the eighteenth century – Montesquieu, who is credited with developing a doctrine analogous to modern paradigm of possibilism. He opined that man possesses free will and has the ability to choose from a series of opportunities. Similar thoughts were also put forward by another eighteenth-century French philosopher, Comte de Buffon. He believed that man was ordered to conquer the earth and even transform it. Their views laid the base for crypto-possibilistic hypothesis (Adhikari, 2010).
- It was only in the latter half of the nineteenth century that under the leadership of Vidal De la Blache (1845 – 1918), a possibilistic view of man-environment developed. The focus of this philosophy was "Nature has set boundaries and has provided possibilities for human settlement, but the way a person responds to these conditions or adjusts it depends on the traditional way of life." Vidal rejected the concept of material determinism and advocated favourability. He even rejected Durkheim's opinion of human geography as social morphology rather insisted that man was a partner and not a slave of the environment (Dikshit, 2009). He was critical of Darwinian-Ratzelian heritage which proposed environmental determinism and put forth the concept of possibilism. He sought a scheme for
- understanding the interaction of nature and culture that eschewed both

environmental determinism and radical possibilism to seek answers or solution for the dichotomy between the human and the environment.

- In the twentieth century, possibilism got stronghold after the publication of Blache's article in 1913 where he categorically states that geography as a discipline seeks to measure and role of man in modifying the earth surface. This was further strengthened when his book was published in 1921 (English translation in 1926), though posthumously. He observes that nature gives man materials which have their inherent needs as well as limitations thus leading them to limited uses.
- Possibilism was further flourished by acclaimed historian Lucien Febvre (1878-1956). He puts forward - "Whatever the men do in their own environment, they cannot completely get rid of themselves completely." Febvre emphasized human initiative and motivation against the environment, destroying the environmental deterministic reasoning and as part of the environment of any group, as well as other humans, because they belong to the next group's cultural surroundings, or the constraints of the environment are influenced by such thinking. He stated that in the view of possibilists, a homogeneous region does not necessarily result in a homogeneous society. This is because people residing in any area have the choice of possibilities time to time and also in the quantity they want.
- Bruhnes followed Blache's ideas and took it to next step, he not only transmitted Blache's philosophy in France but also disseminated it to different parts of the world. In 1910, his monumental work La Geographie de L'Histoire was published.
- Barrows, in his presidential address (1922), recommended that relationships in geography should be studied "from man's adjustment to environment, rather than the reverse". Hettner (1907) also supported the concept of geography as the study of relationship.
- Thus, both the physical factors and the human factors (cultural environment) are to be studied in their relations to each other.

Probabilism:

- The concept of probability was put forward by the O H K. Spat (1957) is the idea that the physical environment does not specifically determine human activities, yet it gives some reaction to others. This word was proposed as a mid-route between Ratzel's complete environmental determinism and a revolutionary prospect of Febvre, Lablache, and Sauer.
- While the environmental determinants, influenced by the cause and effect of Darwin, said that human activities are controlled by the physical environment, according to the possibilities, the physical environment provides the opportunity for many possible human reactions and enough conscience to choose people is among them.
- According to Spate, "human action was not said in the case of all or some kind of

compulsion, but rather the balance of the possibilities". For example, there is a possibility that the use of land in the Sutlej-Ganga field decreases intensity from market centers; Population density decreases away from metropolitan centers in all directions; With the settlement of the village, the crop yields less than a few walking distances.

- However, there can be exceptions for each of these generalizations, and in many cases, there is a limit to the boundaries that they keep right. Exception and boundary demand details After this concept, probability theory is considered as an essential component of geographic analysis because "a general mode of discussion" was provided for " the scientific study of the scenario". This view, in fact, is completely consistent with the original Vitalian concept. Geologists started using probability theory to determine human and environmental relations and also carried scientific studies of the landscape.
- The probability theory was criticized on many grounds. For example, a complete knowledge about the environment cannot be available; The available data about resources and their use cannot be reliable; The perception about resources (environment) differs from humans to community, community to region, and country to country, prospective model's application, due to these constraints, can be difficult and thus the results obtained cannot be authentic Are close to the ground reality.

Cultural or Social Determinism:

- Cultural or social determinism emphasizes the human element: "Our thoughts determine our actions, and our actions determine the nature of the world's last" (James, 1932: 318). Since there is a difference in human interest, desires, prejudices and group values, therefore there is a difference in the level of cultural landscape and socio-economic development. The amendment of an environment depends on our perception, thoughts and decision-making processes.
- This philosophy made by American scholars can be explained in principle, according to which "the significance of man's physical and biological features of his residence is an act of man's own views, objectives, and technical skills". For example, a country that is financed by a hunter's perspective can be poor for an agricultural person; The importance of coal is not the same as those who can not use it. All these truths are self-evident. It is also true that as technology develops, the importance of the environment is not reduced, but the change becomes more complex.
- The philosophy of cultural determinism is quite broad among American geographers. For example, Eduard Wellman wrote that "the environment is essentially neutral, its role depends on the level of technology, the type of culture and the other characteristics of the changing society". For example, mountain pass estimation, which is for horses, automobiles, airplanes, will be different for them; Assessment of fertility of soil will not be similar to the perspective of a Japanese farmer, on the other hand, or an Amazonian Indian. Similar natural
- conditions can say different reactions on human part, and in similar circumstances,

different cultures can occur. George Carter is out of three fundamental factors in human geography, he has given more emphasis on cultural forces and wrote that "staying as a primary reason for changing the ideas ..., these are the ideas that determine the human use of the physical world We do". He also said that human beings are the decisive factor.

- After World War II, schools of social determinism became very popular in Austria, Holland, and Sweden. Social geography relates to the spatial distribution of society. This, however, is not able to gain a deeper understanding of social relations or landscape. Social groups can be isolated in the context of ethnic, religious, professional and some other characteristics, whereas social change is only mentioned, but seldom is associated with any fundamental economic causes or society's class structure.
- The study of the effect implemented by these groups on the scenario reduces in the definition of purely external factors of the cultural landscape (deployment and deployment of homes, land uses, type patterns etc.), which in the form of morphology and Under the functional changes, boundaries of the same road are infinitely the use of such 'macro-regional' research is usually used in the character. Motivated and cannot provide any basis of
- scientific findings of real importance. Thus social or cultural determinism does not adequately assess environmental factors, that is, the effect of the natural environment on 'cultural geographical differences'. Thus, social determinism is thus rigorous as the environmental fatalism and therefore cannot be accepted in its raw form.
- To sum up, the major debate among the geographical thinkers is whether people are an active or passive agent in the man-nature relationships. The entire debate revolves around two issues – Firstly, resource exploitation is inevitable for the survival of human beings which means that he will take more and return less. Secondly, there is hope that morality will win as human beings will vote for greater gains than meager personal benefits. The doctrine of sustainable development leads towards both these issues as it is based on the theme that development means meeting the needs of the present without compromising the ability of the future generations to meet their own needs (Report on World Commission on Environment and Development, 1987).