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# Construction of geographical space: Transition economy – From agriculture to (pre)industrialization

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## ABSTRACT

The dialogues to rescue the geo-history of the human transition on Earth are salutary in the contemporary world, both so that the process of construction of geographical space is not lost in fragments, and for the understanding of the transition and economic relationship of people with nature. Thus, it is legitimate to highlight the objective of this study is to discuss the process of successive construction of geographic space. The methodology used was the bibliographic study, with a qualitative focus and descriptive scope. Among the main results is that the process of human expansion on Earth occurred because of the need for survival. It was no longer possible to find food in abundance and people began to have unmet primary needs. People had no way to remain nomadic, because the scarcity of food led them to stay in the same place for longer, thus creating bonds with the place. Climate change and the rise of human society were some of the reasons for finding shelter and food. Humans eventually discovered that they could produce the food they needed by growing plants and domesticating animals, this was the first major transformation. With this, space becomes territory, as spatial relations begin. The second transition was the fosses and the third the (pre)industrialization, and the latter continues to need the agricultural economy. With the emergence of industries, the society that was ruralist began to look for cities in search of better living conditions, which began with clusters of people in small spaces, in a new territorial ordering.


**Keywords:** Anthropic Action, Agricultural Economics, Nature, Spatial Relations, Territory.

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## INTRODUCTION

Human movement on Earth generates spatial transformations that lead to the construction of new spaces and these are considered geographic because they affect human actions. Anthropic (human) action is considered evasive to the Environment, even if natural catastrophes occur and destroy an entire scenario, with changes in the landscape, these phenomena are typical of Nature. The changes resulting from bad weather are commonly accepted, even if they are sometimes worrisome, however, the human being is still pointed out as the main cause of contemporary catastrophes.

Space is an important point of discussion in geography, it is one of the categories of analysis, here considered as the first that should be put on the agenda. The proposal of Geography positions geographic space as the space of the human being, the one that suffers anthropic intervention and corresponds to the organization of society and its elements on the environment. Nature is the oracle of life, to it is attributed all the wisdom of existence on Earth, to man it was given to science so that it can reach answers to his anxieties. Observing is necessary. Reflecting before acting is an obligation.

It is not intended in this study to exhaust the entire subject, but to understand that with this discussion in the light of Geographical Science and its followers it is possible to contribute to the foundation of geography. The basis of knowledge is to know, in an essential way, what is studied, how to research and what are the limits of such investigations. The various philosophical schools that built knowledge are more than cultural references, but it is in epistemology that we seek concrete subsidies to know a science.

It is not possible to understand the history of humanity as if it were a vast void. Social groups, from ancient times to the present day, depend on complex and interconnected physical, chemical, and biological processes. Although the Earth has remained essentially the same, space, affected by actions over long periods, has had its distribution profoundly altered. In various periods there have been changes in the way of being of the human being according to the climatic and cultural successions.

The first major change in human history was the transition to agriculture, which caused the destruction of a significant part of the natural forests in the old world, and triggered an arduous struggle for these forests to survive the numerous abuses. The period in which people began to have influences from the physical world, with the management of ecosystems that is fundamentally characterized by a process of humanization of culture. The expansion of European colonization was responsible for transforming most of the terrestrial landscape. The intellectual contribution of the thinkers helped significantly in the transformation of traditions and the emergence of new ways of living in society.

The different forms of life on Earth, including humans, do not exist in isolation, but as parts of ecosystems. The term "ecosystem" is used to refer to a community of organisms and the

environment in which they live. Within an ecosystem, photosynthesizers are responsible for providing basic energy, thus forming the basis of a food chain that unites the various organisms.

The second major change was related to energy sources. Urban growth began with pre-industrial cities. In part, geographic space was created deliberately, but without control or planning, this reflects the innate need of human beings for expansion and territorial dominance. Cities grew and spread, also driven by population growth.

The study in question is around Ponting's work "A Green History of the World", however, Bachelard, Bollnow, Cassirer, Claval, Dardel, Harvey, Hartshorne, Kant, Santos, Tuan, among others, constitute the link between the history of human expansion on Earth and the correlation with the studies of Geography. Geography is in the construction of geographic space, which begins with civilization itself, and from this arises the use of the Earth and the occupation of space, in a way that transformed the landscape and instituted borders.

It is understood that the increase in the human population led to a decrease in the amount of food and people needed to act in a way that solved their needs. With this, geographical spaces are created, through anthropic actions, both rural and cities, first villages and this required agreements, rules to live in society. Thus, the objective of this study is to bring to the reader bibliographic elements that provide dialogue about the process of construction of geographic space.

## ECONOMIC DYNAMICS: SPATIAL RELATIONSHIP WITH NATURE

There are a number of forms of geographical gaze on space. Thinkers of Geographical Science are divided into traditional, modern, physical and humanistic, however, regardless of the line of study, space as the main category is closer to consensus. The evolution of the theses that space is the category that cannot be ignored in a study of Geography took place with the schools of geographical thought and still remains in motion. In this sense, it is possible to perceive space as a whole, even with distinct elements, and its complexity can be explained in the words of Milton Santos (2014), who expose that space is the totality and must be analyzed in a fragmented way.

The elements (natural, human or cultural) and their substrates, in this case, are what form the geographical space and each space has its singularities. In this sense, Dardel (2011) exposes that geographic space is made up of differentiated spaces. The relief, the sky, the flora, the hand of man gives each place a uniqueness in its aspect. The geographical space is unique; it has its own name: Paris, Champagne, Sahara, Mediterranean. From the moment the space has a name, it becomes a place, a territory with cultural and political characteristics.

The forms that space has can be developed by natural phenomena, by human hands, and the latter involves a series of other components. For Milton Santos (2014) space is made up of elements: human beings, firms, institutions, the ecological environment and infrastructures. Each of these has

specific characteristics that comprise space in its entirety, without losing the sense of human movement on Earth and its relationship with nature. These elements can be simplified into: Human; Nature and Cultural.

The human being is an element by the fact that they exist, are somewhere and move in time and space. Firms, institutions are run by people. The first has the function of producing goods, services and ideas. The second institutes norms, orders and legitimation. The ecological environment element, according to Milton Santos (2014), is related to the territory. As for infrastructure, the author refers to work as human production materialized and geographized in the form of buildings, plant cultivation, roads, reforestation, etc.

It is perceived that the way of seeing the space is not consensus, however, it is synergistic. It follows a linear line in which everything revolves around the human being, and he transforms the space according to his physiological, security, social, self-esteem and personal fulfillment needs. It is these needs that motivate people to always look for something more.

This is like a five-step ladder that the individual would climb, as the first obstacle was reached, he would look for something more, that is, once satisfied, the first need would move on to the next. In fact, human need is rotating. Human beings will hardly be satisfied with what they have, they will always want something different from what they already have. In the search to achieve something, the human being puts himself on the street, has the road as a technically outlined means to reach a destination. In the search to reach this place, those who walk through it see the transformation of the landscape, where the vision reaches, in addition, it loses its meaning.

The human being lives in a sea of doubts which is inserted in how he will achieve full satisfaction, which is considered here, something impossible to achieve, once one need is satisfied another will emerge to take the place of the one already satisfied. Space has a beginning and an end, it has a name and this name can be assigned individually or collectively. Space is a delimited void that human beings will fill according to their needs. However, Bollnow (2008) presents an interesting position, according to him:

> The question about space is, therefore, a question about the transcendental constitution of man. On the other hand, it simultaneously means that space is not only there, independently of man. There is only one space since man is a spatial being, that is, he forms space and expands in space. (BOLLNOW, 2008, p. 21).

Bollnow's position leads to the reflection that space is for the human being as it is for space. And it is a space Being! It can be said that the human being is the origin and end of a space, at the same time that he is the center of this universe that he created, transformed, or that he is simply inserted. There is a correspondence between one and the other, in which space can be considered as concrete, something palpable, possible to feel by touch, as it is possible to feel it by its conception.

Although, Hartshorne (1978) argues that geographic space is an intellectual construction, a conception of the way that human beings see reality in the sense of apprehending how the spatialization of society and everything that is constructed by it happens. For the author, space is abstract, it is the desire that the individual has to satisfy his needs, it is at first individual, and then it becomes collective. These spaces are endowed with size, shape, structure and configuration of movements. It is considered that in one region it can be part of another at different levels, a network is formed. Kant (2003) also has the same position, he says that space is a form of sensible intuition.

In this study, "quotation marks" are opened so that space can be thought of in a quantitative and qualitative way, as Santos (2014) defends, leading to understand that the elements of construction are variable, in addition to being mutable. They move according to time, place, natural mutations and anthropogenic actions in time. Space and time is a set of landscapes that are formed by human actions from one point to another. It is therefore taken into account that space is fixed and that it is the human being who moves, transforms, builds and sometimes destroys.

Human movement can take him to other spaces, different from the one in which he was inserted. This dynamic leads the human being to have contact with other elements that he did not have before — or that he had, but that the way of moving would be different, due to the environment in which he found himself — leads him to develop new needs which will lead him to seek to be satisfied. They are objects inserted in nature that from them, others emerge in a vicious cycle of life and its substrates. Milton Santos (2014) explains that:

> [...] Each place attributes to each constituent element of the space a particular value. In the same place, each element is always varying in value, because in one way or another each element of space—men, firms, institutions, environment—enters into relation to the others, and these relations are to a great extent dictated by the conditions of the place. Their joint evolution in a place thus gains its own characteristics, even if it is subordinated to the movement of the whole, that is, of the set of places. (SANTOS, 2014, p. 21).

The constructor-transforming elements of geographic space consist of a network of interactions from which Hartshorne's theory (1978) does not escape its essence. Be it abstract, that is, concrete. The idea of space in which Milton Santos refers does not diverge entirely from thinkers such as Hartshorne. Now, Milton Santos (2017, p. 122) states that "Space should be considered as a set of relationships carried out through functions and in a way that presents themselves as a testimony of a history written by processes of the past and present".

Another thinker who draws attention with an insignificant position on space and place is Tuan (2013, p. 11), for the author, "Place is security and space is freedom: we are connected to the first and desire the other". So, for example, the house, the farm, the city is the security of the individual, that is, place; the sensation of amplitude, of infinity, would be space, or even of spatiality. However, the author explains that it is possible to measure space and that it is a geometric unit. Space is delimited

and spatiality the feeling of spaciousness of space, which at the same time, according to human needs, may or may not be synonymous with freedom.

The relationships between natural, human and cultural elements are considered multilateral and all of them interact, sometimes construct, sometimes transform the space. In time, in history, it is perceived that each of these elements produces new substrates that lead to human actions and, consequently, transform cultures and nature. In this context, the experienced space comes in, the one that Bollnow (2008) explains is real, concrete, where the core of life occurs, which gives the reason for the search for the satisfaction of their needs and the hope for better living conditions.

The concrete meaning of the filling of space is in the maintenance of life, in the satisfaction of needs. The elements that make up the universe and build spaces are constantly evolving. Santos (2014, p. 20) explains that "[...] in the course of human history, there are several demographic revolutions, each with a different meaning." The search for new places leads to the construction of spaces! Spaces built in other larger spaces, interaction networks are formed, a set that contains several aspects.

The magnitude of the spatial analysis category makes it possible to affirm that space is the most relevant category of geography, not that the others are insignificant. Space is an autonomous category, its elements and substrates form a complex whole and linked in networks of interactions with the other categories. The way of dealing with space is that it gives form, imposes borders and territorializes, modifies it, or reconstructs it. Space is rectilinear, even with its borders, it is a presupposition of the other categories, and the individual is the one who performs the sinuous movement that provides new forms, new structures.

Human displacement on Earth leads to the formation of geographical spaces shaped by the physical, cultural and economic needs of each society, which change over time. The overlapping of significant elements for each moment of history reveals new forms to the detriment of obsolete ones. Evidence of human development and presence, as well as of their ancestors, is revealed by anthropologists through fossils of skeletal fragments and artifacts discovered at archaeological sites.

Understanding the emergence of humans on Earth is important, there is no denying it. Early humans appear to have inhabited a wide variety of environments, situated in a belt of tropical and semitropical regions that stretched from Ethiopia to South Africa. The population was small and dispersed, they lived in groups that probably depended mainly on gathering nuts, seeds, and plants, supplemented their diet with the remains of animals killed by other predators, and possibly by hunting small mammals. (PONTING, 1995).

Although people needed animal skins to survive, human groups preferred harvesting, as hunting was a difficult and risky activity. The development of the human race and demographic growth promoted the expansion of colonization. Gradually, people stopped being nomads and began

to settle in strategic areas, which protected them from animals and other human groups. In the absence of changes in the natural order of space, nature was kept intact.

The space thus begins to have shapes, colors and specificities. It starts to have a name, to be identified as a place and when institutionalizations begin, it becomes property, territory. Territories appear at the moment when one starts to have strength over it, to build bases of power, that is, that there is human domination of one over another of the same race and over a certain space. It all starts with empirical knowledge, it must be said that the experiment is what leads to the formation of the theory, and then institutionalized.

Vernacular knowledge, geographical knowledge is restricted to a circle, so the need to overcome this deficit arises, then geographical frameworks based on detailed inventories of the places that are in a certain space that power controls begins to appear. In this way, the notes of locations and information so that one can have control over the territory is the tool of control of Power. (CLAVAL, 2011).

Knowledge about vernacular geographic coordinates contributed to local power. People could move around based on empirical knowledge, but if the holder of that knowledge did not have one or more followers, when he died the knowledge was extinguished with it. Claval (2011) explains that in order for the members of a society to obtain adequate geographical knowledge for orientation, it is essential to communicate what has been observed. The peoples do this by giving names to the land. Physical and human elements interact in the process of spatial organization.

Humans have lived as nomads for approximately two million years, living off harvesting, herding, and hunting. But, with the change, the natural weather passes to another time, based on agriculture and pasture for animals. This system of food production occurred, says the author, in three strategic regions of the world: Southwest Asia, China and Central America; marking the most important transition in human history. (PONTING, 1995).

It is important to consider that scientific geographical knowledge is organized in a systematic way to enunciate explanations about phenomena that occur in terrestrial space, which is transformed through the relations of human beings with Nature (SILVA, 2017). However, it is worth exposing that geographical knowledge is born with civilization, in its first intelligent manifestations. Human beings have distinguished space and time, when they perceive climatic actions, sun and moon, cold and heat, rainy and dry season, etc. He begins to understand the meaning of my, yours, ours (CARVALHO, 2006).

The convergence of phenomena, including the transition to agriculture, the growth of stable societies, the emergence of cities, skilled labor, and the formation of powerful religious and political elites, is often termed the Neolithic Revolution. While the consequences of all these changes were clearly revolutionary—in terms of their impact on both the way of life and the environment—it is a

mistake to describe this process as a revolution. The period of time during which these changes took place was long, in a time interval of some four to five thousand years, the contribution of each generation being probably minimal, but of great importance. (PONTING, 1995).

The adoption of agriculture, along with its two major consequences: communities and a continuously growing population. This tension was soon localized, but, like agriculture, it spread, and so did its effects. The use of agriculture involves the destruction of the natural ecosystem so as to create an artificial habitat in which people plant their crops and stock animals. Consequently, the natural balances and stability of the original ecosystem are destroyed by humans.

The story is, on the one hand, about how the limitations were circumvented and the consequences for the environment. Arguably the most important starting point for basic ecological damage was the growth in the number of human beings far beyond the levels that could be maintained by natural ecosystems. The first step was the gradual diffusion of human beings throughout the world and the adoption of techniques by them.

The adoption of techniques provided the opportunity for mastery of terrestrial ecosystems, which depended on a series of special attributes that began with brain enlargement, speech, social cooperation, and the development of various technologies to advance the process of adaptation to a wide variety of habitats. The end result was the disruption or destruction of natural ecosystems, as all cultivation implies the creation of an artificial environment, for the germination of certain selected plants together with the adoption of animal domestication.

## THE HUMAN BEING AS A TRANSFORMING ELEMENT OF SPACE

Reflection on space is inherent to geographical studies, however, it is not the only science to study it. Space can be that which has not undergone anthropic actions (natural space), the transformed and the built (the latter two are classified as geographic space, precisely because it has undergone anthropic action). In rectilinear lines, the first is space in its natural form without anthropic management and the second, as much as the third is defined as being that which has been transformed by human actions, that is, the metamorphosis of space occurs. It is the human being who organizes his space, who gives shape according to his vision of the world, his conceptions, who takes the form that will coordinate his actions.

Space is constant, however, reconfigured by human actions and natural phenomena. The transformations of space lead to the occurrence of phenomena in nature, which at times strengthens and at others exhausts the forces of the positive evolution of the human being and the environment. Transformations are necessary for the survival of human society, it is up to the individual to decide how he will take advantage of his free will to build his geographical space. However, history shows

that the first civilizations modified the environment of large areas in such a way that the impression it gives is that there was never native nature in that space.

The main transforming agent of geographic space is the human being. An element that builds (and destroys), that forms new landscapes. The human being himself is nature, but he has the power to create and recreate space, according to his needs and interests. Space is transformed and from the moment it takes shape it becomes a place. This place becomes the special environment for the person. In this sense, Tuan (2013, p. 167) explains that "Space becomes a place as it acquires definition and meaning", the author refers to the elements that define space and that the individual becomes more articulate when he achieves his goals.

The social relations that affect at all times are promoters of events that occur in the construction of space and in the acceptance of the forms that are outlined (MELO, 2024). Changes can be apprehended in the analysis of space from actions and objects. In this sense, geographic thinking seeks to understand the phenomena and the correlation between them and the ecosystem, and the preference is that these relationships are harmonious, sustainable. From this comes the understanding of how geographic space is constructed/transformed.

It is perceived that spatial transformations are given by movements arising from natural phenomena or by anthropic actions. Sometimes, the catastrophic phenomena of nature are a consequence of decision-making, both individual and collective. The human being is the main element of transformation of geographical space, it is through him that roads are opened, asphalts, bridges, buildings, schools, among other elements of territorial planning are built. Also, new elements are created and recreated, such as plastic, paper, cans and chemicals in general that are released into rivers, lakes and oceans.

The space is modified to meet human interests, which has in itself the egocentric feeling of meeting their needs, without observing the consequences of their actions. Dardel (2011, p. 29) explains that "Man also becomes a builder of spaces, opening paths of communication: paths, tracks, roads, railways, canals are ways of modifying space, of recreating. The route undoes the space to recreate it, to regroup it." A poorly thought-out, reckless move can lead to consequences with no possibility of return. There are cases of species extinctions, as the substrates of their habitat have been modified by people.

Human beings are positioned in front of the construction of spaces that meet their basic survival needs, in a way that believes it is their right to use nature without thinking about tomorrow. Kant (2003) draws attention to the fact that human beings tend to want things to work according to their desire, with the way in which they appear to their senses, individual faculties that each one has. The author explains that spatial transformations occur in time, in the empirical or scientific world and occur with human participation.

Geographical space has human action as a guideline. It is the main element of spatial transformation. His intervention on the environment, as a product (or producer) of human relations and his practices on the natural substrate comprises the network of interactions that Milton Santos (2014) explains. Reasoning, when seeking to understand the construction of space, may seem complex, however, the elements that lead to significant mutations are substrates of the Human element, as they are consequences of its actions.

The position that the individual occupies is the center of this universe that is called space, which later comes to be called place, region. Its visibility, its reach depends on your needs. Hence the reason for stating that each space takes forms according to the substrates of the elements contained in it, and that the human being has the driving force as a tool to be used in his favor. Nature ends up being complicit and real, at the same time, where its forces contribute to the plans that human beings draw for themselves, in the environment in which they live.

The panoramic view of space contributes to understanding that each anthropic movement that alters the landscape is a transformation. To be a construction of geographic space, it is necessary to carry out actions such as: construction of hydroelectric plants; revitalization of degraded areas; felling/burning; afforestation; Cities; irrigation systems; the transposition of rivers such as the São Francisco River, agroforestry systems; soybean crops (among others); Dams; fish breeding in captivity and etc., that is, actions more visible to the human eye.

The elements given by Milton Santos (2014), the firms, institutions and infrastructures, are the results of the actions of people, here, we have the Human element as a substrate. Through their actions, the territory takes shape, comes into existence and a new landscape emerges. These substrates have forces in themselves that modify and build new spaces. Perhaps this is why Santos places them as an element and not a substratum. For this reason, it is listed the importance of observing the context in which the geographical space will be analyzed, the method to be used.

Formed by an inseparable set of systems, geographic space has in itself the shape of the society that is contained in it. The Incas, for example, the space occupied by them has its own characteristics, recognized by their culture. Thus, other cultures have also left their marks in space and time. In the beginning, it was pure, wild nature, formed by natural elements that were modified, with the insertion of artificial elements, which originate from nature itself, but with human interference. From these objects, hitherto foreign to nature, others emerge, such as mechanics and cybernetics.

When studying geographic space, another category of analysis of geography is brought to the fore, Time. Yes! Kant (2003) already conceived it in a continuous way, with no chance of breakage, of sinuosity, while space is represented in geography as: arrow, cycle and spiral. In order to understand the elements of transformation/construction of space and all the substrate that inserted in

the context, the idea of a cycle of facts that repeat themselves successively is brought to this discussion, connecting the starting point to the ending point.

Regarding this positioning, here it is considered that each space has different forms, when it becomes territory. But it is time that contributes to the drawing of these boundary lines between space and the sense of spatiality in which it is attributed to the space experienced and transformed into its interests. It is the cycle of life aligned, human needs and at a certain moment with nature itself.

In this sense, in the analysis of geographer Suertegaray (2001, p. 2):

> The critical view of Geography, by breaking with the view of stability, begins to conceive time as a spiral. In this sense, time is understood as an arrow and a cycle, that is, geographical space is formed (in the sense of formation, origin) and organized (in the sense of functionality), projecting itself as a determination or as a possibility. This projection is made by advances (arrow) and returns (cycle). In this context, geographic space is the coexistence of inherited forms (of another functionality), reconstructed under a new organization with new forms under construction, that is, it is the coexistence of the past and the present or of a past reconstituted in the present.

In the light of geographical science, Ximenes and Locatelli (2016) argue that space is composed of elements that change meaning over time, as soon as new elements are inserted into a complex of spatial systems and that are susceptible to measurement. Time, an important category, can register acceleration or deceleration of interdependent systems, and with the human being as the main modifying agent of the landscape. The phenomenon of transformation, observed in its totality, has spatial and subsystem occurrences.

Anthropic actions alter the relations of interdependence, that is, they subordinate or release degrees of correlation, giving a new order to the geographical lines. The limits of correlations change as the main elements of construction of geographic space correlate with others. In this context, studies by Harvey (2013, p. 279) on "Responsibility before nature and before human nature" lead to reflection on the responsibility that the individual has over nature and the species itself. Dealing with all the correlation between the evolution of things and nature in an ethical way is not easy, however, it is possible and necessary.

In order to have an idea of the influences on anthropogenic actions that interfered in nature, it is necessary to have the quantification of the changes on them. The limits of the correlations are not always perceptible, at first glance, requiring an analysis of time, space and successive linkages of variables that make up the networks of interactions. Each element that is composed aims to observe the behavior of its substrates as a function of a capacity or a set of phenomena.

Humanistic rhetoric contributes to the understanding of the human element, as a constructing agent, its networks of interaction, contribute to the understanding of geography in space and time. Just as Physical Geography with its study of the natural characteristics existing on the surface of the

Earth, it is a doctrinal task to investigate the conditions of natural nature. The fact is that geographical science is a complex system of elements that make up the environment and that the human being is the center of this finite Whole, with endogenous characteristics with strong exogenous influences.

Bollnow (2008) attributes emphatic recommendations to the researcher to understand, before other factors, the space experienced and the influence that feelings have on people. This factor is observed by the need to build paths to reach a place. It is likely that human beings walk the same paths that irrational animals have traveled for thousands of years, however, there are many new paths that emerge, forming a complex system that modify the landscape and build new spaces.

## AGRICULTURAL ECONOMICS: THE CONSTRUCTION OF GEOGRAPHICAL SPACE

The creation of artificial environments for food production has led people to focus efforts on keeping themselves in one place. It is the beginning of a new era. However, the growth of communities not only concentrated the environmental impact of human actions, but also meant that it would be much more difficult for humanity to escape the consequences of their actions. This, therefore, understands that space is a set of relations expressed by functions and forms, which testify to a history shaped by historical successors (SANTOS, 1980).

Cultural elements refer to firms, institutions and infrastructures. The spaces that receive human work are usually instituted from these elements and their substrates. In this context, it is possible to observe the amount of secondary elements that make up the entire landscape. This built space comes to be considered as the place where people live or enjoy part of their time. Firms are used for survival. The institutions for the social maintenance of life and the infrastructures the human being has as the materialization of his actions.

The complex whole of cultural elements is formed according to the habits of the society that are reproducing it. The continents of the globe are used as examples: Africa, America, Antarctica, Asia, Europe and Oceania. Each one has its own characteristics that in their territories, in turn, also have their characteristics that build their spaces according to the local culture. Thus, it is also for the care of the use of nature, with the care of its garbage, with the consequences of its habits.

It is in proportion to the needs of society that space is organized, that it is restructured. The needs can be individual as well as collective, but it is the collective ones that stand out and have the greatest impact on the space. However, within geographical spaces there are several other spaces that are built by smaller numbers of people and these are what make up the whole. A whole composed of particles that form systems of interactions and that shows how the contemporary Earth and Nature's cry for help are seen.

It is important to highlight that the elements do not segregate, they can overlap in a certain space, but are connected by substrates that form the landscape. In this study, the cultural element is directly linked to the human element, because culture has in its principle the human being himself. It is the human being who idealizes, empowers himself with the knowledge of his ancestors and lives the way they choose for himself.

Agriculture has not solved the problem of producing enough food to meet the needs of the world's population. It had been adopted by human societies throughout the earth, mainly because the increase in population meant the need for firmer means of obtaining food. Human conditions throughout the world varied from place to place and from period to period, depending not only on the factors that affected agricultural production, but on those that affected population growth.

The period from the end of the fourteenth century to the middle of the fifteenth century was one of comparative prosperity. Ponting (1995) explains that the population remained below the peak of 1300 for approximately two hundred years. However, by 1600, it was approaching 90 million, slightly higher than in 1300, even though there had been very little improvement in agricultural productivity. The signs of overpopulation and imbalance between the food produced and the number of people emerged again.

Human actions have caused profound changes in the planet's ecosystems. The expansion of settlements, the creation of fields for grazing and agriculture, the continued clearing of forests and wilderness areas, and the draining of swamps have progressively diminished the habitats of almost all species of animals and plants. Intentional hunting for food, furs, and other products, as well as the gathering of plants, led to a drastic reduction in several species, with cases of extinctions.

The introduction of new plants into ecosystems by humans has often resulted in unexpected and even disastrous consequences. While the loss of wildlife has been noticed in earlier periods, it is only in the current century, with more detailed research and a growing awareness of the problem, that the seriousness of the situation has become more evident. The pace of destruction has been alarming, especially after European expansion from the 1500s onwards. (PONTING, 1995).

In all societies around the world, the agricultural result of farming was essential for people's survival. One bad harvest was a calamity, but two in a row could bring disaster—not only for the poor, who were always the first to have their food quotas reduced and to suffer rising prices, but also for the peasants and, ultimately, for society as a whole.

The economy depended on the management of financial resources and agricultural production methodologies. To understand this part, we seek Ponting (1995) who divides the expansion of European colonization into two phases — internal expansion, followed by external colonization — which can be seen as part of a single process caused by the same type of pressures. The combined

impact of these two movements is what really shaped the modern world. With the search for new ways to reach India, for the spice trade, the human being enters the phase of external colonization.

These two phases transformed Europe, which was one of the most backward societies in the world – until at least the fifteenth century – into the most advanced. The changes involved the way people thought about the world around them, the appropriation of natural resources, and the exploitation of most of the rest of the world for the benefit of Europeans. These effects continue to be felt throughout the world, but the most fulminating and immediate effect of the expansion of European colonization, beyond the borders of Europe itself, was its lethal impact on indigenous peoples and societies.

## RELATIONSHIPS BETWEEN HUMAN BEINGS AND NATURE

The environment, in successive generations and different societies inhabited, was formed by human actions. The driving force behind these actions was quite simple: with the continuous increase in population, the need to provide food, clothing, and shelter arose. However, the perception that these societies had of the environment played an important role in justifying the treatment they gave to space and in explaining its role in the general structure.

It is important to emphasize that the use of land, the occupation of space at a given moment is, as Milton Santos (2012, p. 48) said: "[...] the result of the total appropriation of rural space, which has, in each place, specific forms". In this sense, it is noticeable that each space has different forms and that territorial lines must be observed and thought of in a way that contributes to the evolution of things.

Many thinkers looked at the world around them and saw that what is now recognized by ecologists as competition and cooperation between plants and animals, ecosystems, produced an ordered world, in which each part seems to have a role and a purpose within a global plan. This led them to the arguments that such a plan could only have been conceived by a God, or by gods, and they began to speculate about the position of human beings within that plan.

The individual usually sees his own surroundings as the center of the world and treats his private and private life as a reference for the universe**.** But thinking changes over time, with the emergence of new survival needs, which is mainly linked to the environment in which they live. Perceiving the world in a broad way has led human beings to search for new lands and develop theories and methods of recognizing natural resources in their favor. (CASSIRER, 2012).

Human thinking, the development of scientific thinking that Bachelard (1997) discusses, brings the idea and perception that the search for knowledge took the human being out of the empirical that leveraged him to the observation and construction of more improved knowledge-

doing. The pre-scientific, period in which the abstract was present among the great thinkers, lasted until the eighteenth century.

European thinking on the relationship between humans and nature has its origins in the influence of the philosophers of ancient Greece and Rome, as well as in the ideas that the Christian Church received from its Jewish roots. The strongest belief, shared by both classical and Christian traditions, was that human beings were placed in a position of control over a subordinate nature. (PONTING, 1995).

The human being, a thinking being, has for a long time the attitude of following his instincts. However, when he began to realize that food was increasingly scarce, the survival instinct began to demand from them quick attitudes that would contribute to the preservation of the species. So, people start to organize their thoughts, observe and follow a path that leads them somewhere.

With this arises the need for direction, to have somewhere to go and to be able to return and the studies of the movement of the stars in relation to the Earth, emerging the cardinal points, which are divided into main cardinal points (North, South, East and West) and collateral points (Northeast, Southeast, Northwest and Southwest). People need orientation in space and Bollnow (2008) explains that when human beings leave their habitat and, for some reason, break territorial borders, there is a need to learn to orient themselves, transform this space into a place, a territory necessary for survival, or even direct themselves back to the previous space.

In the early stages of European expansion, from the sixteenth century to the mid-nineteenth century, Europe itself continued to have a mainly agricultural economy. The colonies provided the opportunity to plant crops that could not be planted on the continent because the climate was not suitable or because cheap labor was not available. Third World countries have become major producers of crops and raw materials for Europe, rather than manufacturers of industrial products.

Diseases have had a profound effect on human history, according to Ponting (1995), in three different ways. First, there were the highly fatal explosions of epidemics and plagues. Second, persistent and seriously debilitating sources of infection emerged, which excluded certain areas from human colonization. Third, throughout history, human populations have suffered from a low level of disease and poor health.

The information available on the state of health of the first gathering and hunting parties is primitive in the extreme. However, it is clear from studies carried out in contemporary groups and from archaeological work that, although there are important differences between the groups, their practice had two beneficial effects. First, malnutrition was very rare and their food consumption was at least as high, if not higher, than that of the first agricultural groups. Second, diseases caused by deficiency were more or less unknown.

One of the greatest changes in the history of humanity was the demographic explosion, partially caused by the decrease in the number of deaths from infectious diseases during the nineteenth and twentieth centuries. Ponting (1995) points out that in Europe, history records a period of frenetic growth at the end of the eighteenth century and in the nineteenth century, giving way to a period of much slower growth.

In Asia and Africa, the story of population growth begins in the same way, but has a very different ending. In this period, the numbers rose, reaching very high rates in the eighteenth and nineteenth centuries, but, as Ponting (1995) explains, unlike in Europe, the period where this growth was much greater was the twentieth century.

But in the Americas and Oceania, the picture is much more complex and reflects different development series. The numbers grew violently, mainly as a result of immigration from Europe, especially during the nineteenth century and also by natural growth. It is understood, with the history of the construction of geographical space, as Carvalho (2006) corroborates, the science of geography has the potential to investigate and unveil an unknown temporal space, which may have been lost in writings, such as what happened with the library of Alexandria.

## FROM AGRICULTURE TO FOSSIL FUELS

The demographic explosion is considered by Ponting (1995) as the second significant change in human history, comparable to the adoption of agriculture and the emergence of established societies, was the discovery of extensive (but finite) fossil fuel deposits. This advancement allowed an era of abundant energy for a part of the global population. Until then, it was believed that, as Bollnow (2008) says, in another context, but that here it fits harmoniously

Space is offered to human beings in a dual way, acting both as a stimulus and a repressive factor. More profoundly, it is perceived as something that belongs to the individual as a member, but which also confronts him externally, manifesting itself as something hostile or, at least, strange.

Consequently, the oppression that was felt was darkness, the night was a time to retire, distances took a long time to be crossed. The forms of energy used until the discovery of this type of fuel were renewable, or believed to be, because trees, one of the most important sources (which can be replanted or regenerate naturally) cannot be considered renewable. The consumption of energy from non-renewable sources has expanded massively and continuously over the last two hundred years.

As the main fuel, wood has faced a growing demand that has led to the continuous felling of forests in several regions, with little concern for replanting them to maintain supply. But until about five hundred years ago, supplies of wood seemed plentiful, with little evidence of anything beyond a

few local boundaries. Animal manure was usually used as a last resort, because, when used, the level of fertilizer on the land dropped and, consequently, crop yields decreased.

Physical geography, at this moment, becomes indispensable. It was necessary to study the natural characteristics existing in the spaces intended for agriculture. He needed effective techniques that would take the conditions of nature. It was necessary to understand nature in order to satisfy the basic needs that human beings had for energy, which The second, in relation to strength, refers to the ability to perform various functions.

Before the great energy transition, which took place between the thirteenth and nineteenth centuries, societies faced a severe limitation of strength, restricting the activities that could be carried out. Ponting (1995) assigns two categories. The first, for lighting and heat sources. The second, in relation to strength, refers to the ability to perform various functions. Before the great energy transition, which took place between the thirteenth and nineteenth centuries, societies faced a severe limitation of strength, restricting the activities that could be carried out.

## ABANDONMENT OF AGRICULTURE (RURALISM) FOR (PRE)INDUSTRIES (URBANIZATION)

The growth of cities over the last two hundred years is responsible for one of the biggest changes in people's way of life. Cities began in a primitive way, with the emergence of societies that settled in one place, ending the nomadic lifestyle. Cities are now a product of human evolution in society and are defining features of civilization.

The formation of empires and the increase in population, associated with smaller-scale trade, resulted in the creation of pre-industrial cities. Societies suffered from a severe restriction of force, which limited the activities that could be undertaken, as people were the driving force. Until the first half of the twentieth century, society was mostly agricultural. The average income was very low and most of the spare resources were dedicated to the consumption of the elites or directed to public projects, such as the great temples, palaces and pyramids of ancient societies or the cathedrals of medieval Europe.

Ponting (1995) points out that pre-industrial cities had different characteristics from contemporary industrial cities. These cities were generally surrounded by walls, which in addition to a defensive function, demarcated the urban space and gave it a name and institutionalization.

The first European region to become urbanized was the province of Holland in the sixteenth century: the process began very richly, as it was created from its extensive system of trade. In 1800, the world's population was still mostly rural—only two and a half percent of people lived in cities. In 1900, one in ten of the world's population lived in cities. Ponting (1995) explains that the growth of cities is a phenomenon linked to the exploitation of fossil fuels and industrialization in the nineteenth

century, along with the development of greater trade and more complex financial transactions on a national and eventually global scale.

The adoption of agriculture had, as an inevitable consequence, the emergence of an established way of life. The first agricultural groups lived in villages of no more than a few hundred people. The primitive cities themselves were essentially ceremonial centers. Some of these early cities were designed according to intricate designs that reflected religious symbols of divine order, or oriented according to significant astronomical positions.

Although much of this trail of destruction had a side effect on agriculture, while also being the deliberate result of hunting and commercial exploitation, it is also evident from contemporary texts that the idea of wildlife conservation and preservation was non-existent until comparatively recent times. However, with the cities, pollution increased.

The creation of garbage has been one of the striking characteristics of human societies. For thousands of years, the main struggle was to obtain sanitary arrangements and the biggest challenge was to obtain an unpolluted water deposit. These problems have become more acute with the increase in the number of people and urban life, but the diffusion of industrial production and the use of new technologies have introduced new pollutants, which have caused new risks to human health and the environment.

For archaeologists, the garbage produced by prehistoric societies is a large component, an important source of information about early human communities. According to Ponting (1995), one of the basic problems of all societies has been to get rid of human excrement and urine, and, at the same time, to obtain a supply of drinking water that is not contaminated with these deposits. The author explains that it was the increase in the use of coal in the sixteenth and seventeenth centuries that produced the first large-scale pollution problems in London. During the nineteenth century, the problem worsened in all cities as the number of inhabitants increased, and coal became practically the only form of domestic heating and cooking food.

## FINAL CONSIDERATIONS

The complex system where the elements of transformation/construction of geographic space are found is correlated with nature. Being space, the manifestations under the Earth's surface and the human relationship with the social movement on Earth, it is necessary to study the environment, where animate and inanimate organisms are located. The system is a social cell, organized, managed, in spatial dynamics. An organism on Earth that has substrates within it that help it evolve.

The human being is the agent that operates the most in space and is inserted in all systems: volutive (will); directive (action); and executive (execution), and the apex of this system is volutive. It is the human being who delegates energies, who carries out the expansion of the territory and who

provides new elements throughout the complex terrestrial system. To understand this mechanism is to understand Life, how it occurs and how the human dynamics with space, person and nature are.

There is no doubt that the changes caused by anthropic actions on the environment are largely in search of a better quality of life. However, what cannot fail to be emphasized is that human evolution under natural nature has been one of destruction and that since the first civilizations humanity has seen nature as its opponent, which we know it is not. The human being is nature, he is part of what is natural, he has the power to modify, to transform, to construct and reconstruct geographical space.

Geography has its origin in the study of nature. The knowledge acquired is the accumulation of many reasonings, over time, with its numerous schools and strands of human thought. Despite all the evolution, there is still a hierarchy that distinguishes knowledge, but two are classical: empirical knowledge (which derives from the perception of an event and habit) and scientific knowledge (a systematic set of knowledge, about the same object of study, relating the facts, in a methodical way, in order to enunciate eternal and universal truths).

The human element emits polluting gases into the air, which, for example, cause reactions in the temperature of the Planet, reaches the atmosphere which, in turn, has changes that in a chain transfers to others such as the oceans and etc. Nature is a complex of interconnected systems, as well as space that contains significant elements for its evolution, which can be positive or negative. The systematization of geographical knowledge brought to a Critical Geography in which the dialectical discourse is to search for truths that contribute to geographical spaces that offer a better quality of life to humanity.

The geographical gaze, the construction of geographical space begins with civilization itself and, from this, the use of the Earth and the occupation of space in a destructive way arise. Cities, countryside, peoples, were built on a sandy foundation, which humanity is in danger of extinction because of its own works. Even with difficulties in thinking about issues such as social formation to the detriment of the environment, it is necessary to do so. The recognition of the territory that the ancestors of contemporary human society lived serves, if not for a rapid change in the way of acting, for an analytical reflection of what will become of the Earth and humanity in the next generations.

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