

Human Culture and how it can be affected by Geomorphology

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ABSTRACT

Original Article:

To date, a majority of geographers have attempted to define the manifestations for convergence between natural phenomena and human's social and behavioral activities. With regard to the results of previous studies in this context, this study seeks to examine and analyze the extent to which geomorphology and its dependant forms affect human culture. In this regard, the culture which evolves under influence of geomorphologic capabilities within the regions has been considered as an organism with various organs. As known, the culture can be influenced of various components such as religion, politics, economy and so forth. Yet, this study seeks to define how cultures can be affected by geomorphologic visions within regions; this can be rooted in ecological thinking or ethology. In doing so, to define and approve our idea in this study, views and theories of geographers have been used as the reference model, so that analysis of them has paved the way to theorize human culture and how it is affected by geomorphology. In addition, an area as research location in Paveh County, Kermanshah Province has been considered for data collection through field study, through which suitable outcomes have been obtained.

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1.Introduction

Geomorphology has still remained unclear for a majority of people and some educated people. Scientific databases and practical application have not been defined properly for geomorphology. Hence, people have not a deep understanding of this term. Even the main topic of this term "a study on transformations in roughness of earth's solid outer crust" has not been cleared for people. In addition, the applied context of this scientific field includes determination of settlements for humans in cities and villages and also localization of civil and industrial projects. An academic definition for the science of geomorphology can be is the scientific study of landforms and the processes that shape them (1990, pp. 1-9). In this regard, this science seeks to identify transformations in roughness of earth's solid outer crust and the factors which affect it, and this is accounted as a paradigm to develop a database for geomorphology in the sciences of geography. In addition, the scenario for scientific databases and practical application for transformations in roughness of earth's solid outer crust for the purpose of determining a settlement for civil and industrial projects or localization of county and city by scientists have doubled the importance of this science. Furthermore, representing a scenario for this science at three spatial areas including geomorphology of a deepwater, coastal geomorphology, and geomorphology of the land out of water by scientists has resulted in expansion of rights and authorities of this field of geography (Drieu, 2006, p. 1). Valuation of all aforementioned concepts for protection from science of geomorphology can help for expansion of rights and authorities of this field of geomorphology. This study intends to go beyond such concepts and define and examine the common point between geomorphology and

human culture regarding the new approach. In other words, a discussion on role and effects of geomorphology in recognizing land surface forms and localizing construction and management of physical structure, and also the role of geomorphology in structure of human's social and cultural behaviors has been represented. This can be a new idea in expansion of the role and importance of the science of geomorphology and developing a new area for this field in science of geography which is based on analysis of effects of geomorphology on forming human cultures in different geographical regions.

2.Research method

In this study, due to the importance of research which includes a new theory of the concepts associated to the effects of geomorphology, the library method and a search in views and theories of scientists in the field of geography has been utilized. Hence, views and theories of scientists develop the theoretical background of the research. Furthermore, In addition, an area as research location in Paveh County, Kermanshah Province has been considered for data collection through field study, through which suitable outcomes have been obtained. This region has been considered the best for the relationship between cultural indicators and geomorphology.

3.Geomorphology and Cultural divergence

The origin for most of differences in components of culture throughout human communities must be searched in difference on characteristics of natural environment. Difference on language, type of food, architecture, religion,

difference on social rituals and customers, and intensity and extent of sexual stimulus all relate to components of geographical natural environment. Geomorphology at any region can be considered as one of the most substantial components in natural environment. Difference on geomorphologic forms can raise a fundamental differentiation in height of each region and difference on temperature, weather pressure, moisture intake, wind direction, vegetation, entry or lack of entry of various weather masses and finally difference in the extent of rain. Till now, the role of some of these components on human and wide range of human's behavioral activities have been examined, for which the infrastructural component which can be geomorphologic differences at any region has received little attention.

4. Analysis

Geographers have paid a particular attention to the building and the mutual relationship between two systems, i.e. 1-an ecological system which ties people and their environment, and can be influenced of space, time and human culture, 2-a spatial system which ties the surrounding regions during exchange of various flows derived from various inputs and outputs to a system. Geographers can make new dimensions of complexity for the relationship between the components of geographic environment and human culture by have a deep understanding in this field. In this sense, they can define latent perspectives on how the human culture and his ecological behavior can be affected by environment. Analyzing and processing the spatial relationships between components of environment can pave the way to explore the casual relationship between various parts of environmental system.

Cultural geographers have defined culture as follow:

Culture is a pattern for human's learnt behavior which develops in a resistant form. Three aspects of this definition in the model by Huxley for culture are as follows:

- subjective realities: this includes religion, language, *artistic traditions*.
- social realities: this includes sexual behavior, reproductive, nurturing children.
- technical realities: this includes food, settlement, transport and (Hagt, 2008, pp. 2-9).

It is obvious that the culture can be influenced of various components including technology, economy, ideology, politics and so forth, that the role of each of these components has been determined by competent scientists. Yet, to date what has remained unknown can be the role of natural components in rise of cultures and developing them. This study aims to define the role of geomorphology in developing human culture as a major component in human life. Hence, a particular attention has been drawn to human culture and how it is affected by geomorphology. For this, a more accurate look into culture necessitates so as to approve this idea. According to this view, culture has been considered as an organism with various organs so that the growth of each of these organs is influenced of various human and natural components. In this sense, the role of geographic space especially geomorphology as a mosaic in building and an infrastructure in geographic environment is of importance. It can achieve a full understanding to human culture with respect to observations. In doing so, to define

and approve our idea in this study, views and theories of geographers have been used as the reference model, so that analysis of them has paved the way to theorize human culture and how it is affected by geomorphology.

The reference models which have been used in this study are as follows:

-The first model: space-time aquarium

The first model used in this research has been inspired of model "time and space determinism" by Hagt. Time and space determinism develop an aquarium in which the human life evolves. No one can come out of the time and space determinism. The life and all activities of human in this aquarium are under influence of three narrow passes, that is, biological, activity and access narrow passes. This is in a way that the effect of three aforementioned bottlenecks can be followed in the life. Yet, it is asked how these bottlenecks can limit the person's desires in their selection for where to live and how to sustain on their activities.

Geographers in Lund university (western south of switzerland) have examined the way through which the bottlenecks derived from time and space have enclosed the human's activities within it, and have displayed that how this can affect development of big cities as a geographic space for finding jobs, selection of a settlement for living, and even selection of a spouse; such activities all associate to the type of existing bottlenecks (1995, pp. 1-28). According to what mentioned above, it can say that geographic space and time can play a major role in conducting human's social and individual behaviors and even his decisions. In this regard, the space can be a function of mosaic in a geomorphologic perspective.

As a geographic space in a *mountainous region* compared to coastal area relies on its geomorphologic landforms, thus the human's behaviors match with the environment, so that this process over the time provides necessary obligations in human's behavioral differences and its institutionalizing in cultural structure. On the other hand, with regard to the view of ecological school, it cannot ignore the creativities and abilities of human. Although the main aim of science of geography lies on an investigation into the relationship between human and the environment, all human activities evolve in an *aquarium* developed by means of time and space. No one can ignore the effect of *space-time aquarium* which derives from the geographic environment and time on human. Human activity is influenced of geographic environment and time; both of these components affect human abilities and his behaviors. Although the role of individual and collective wisdom of human regulates the effect of this mechanism, it is obvious that evolution of human's social-cultural dimensions can come to realize in space and geographic environment, so that the evolution can end by the passage of time; consequently, development and expansion of human culture is a function of *space-time aquarium*. As mentioned, human wit and wisdom can conduct human to another way out of the *aquarium*, but what is obvious here lies on a fact that the starting point for human wit and wisdom can come to realize inside the *aquarium*. According to the analysis of what mentioned above, it can deduce that geographic space is a generality from existing geographic elements at any region, thus geomorphology which affects human culture is the major element in geographic space, so that such a concept

develops from various components including Syncline, Anticlinal, the height of an area, the amount and percentage of slope, presence or absence of mountains, hills, valleys, presence or absence of coastal lowlands, that each of these geographic components can alone affect human culture and emergence of the contexts for cultural ethics, or they can be often considered as an inhibiting or limiting cultural behaviors on human life. Hence, the term "space" is a generality which encompasses the geomorphologic perspective and its components, and plays an unavoidable role in all human's cultural and behavioral activities. According to the analysis of sexual behavior and reproduction as one of the cultural indicators and how this can be affected by geomorphology, it can state that after migration of *indigenous people* in Iberian Peninsula especially Spanish people to slopes of the Andes in South America, no production was seen among them, and shortage of oxygen in the air at that region has been found as the reason for it. Currently, it has been proven that human reproduction due to shortage of oxygen is not practically possible in a height of more than five thousand meters. This has been derived from the effect of height arisen from geomorphologic perspective of Andes on its residents. Conversely, *starting extended families and selecting polygamy* in Iran's Southern coastal provinces and Persian Gulf countries can be rooted in the conditions of natural environment including temperature and air pressure, which are dependent on geomorphologic perspective of each region, because high temperature and moisture cause increasing *man's sex drive and performance*.

The second model (cultures evolve as an organism through reacting to the natural environment)

The second model which has been used in defining the effect of components of natural environment on human activities has been extracted from Ratzel's theory. Ratzel, German political theorist, has used *Darwin's theory* of evolution as a metaphor to indicate that the cultures must be nurtured the same as organisms. He has known the cultures the same as masses and specified the cultural and racial differences.

The same as *Darwin*, he observed an attempt for evolution of organisms among these cultures and depicted it as an effort in vital space. In his opinion, vibrant and lively cultures will be expanded and prevailed, or can be replaced with the cultures which are less important. Use of this view together with the aims for developing Nazi Ideology Empire came to realize, so that quite sad effects were resulted. In U.S, the thinking school relating to this theory was extensively developed and expanded. The aforementioned theory especially at the age of Ellen Semple in the first quarter of the twentieth century was recognized as environmental determinism. This school considered this issue on how the cultures through behavioral consistency evolve in reacting to the natural environment (Korenig, 1960, p. 17).

Muslim Dicky et al(2010) in an article entitled " Language Mapping Based on Geomorphology in Western Part of Java, Indonesia" have examined the role of geomorphology in forming Language Mapping in Western Part of Java, Indonesia. They declared in their study that Western part of Java Island is known as a place with very diverse culture in

Indonesia. Currently there are 3 provinces in this region, namely West Java, Banten, and Jakarta Capital Special Region with more than 40 million populations. There is one main culture in this region, namely Sundanese, with focal area in Bandung City. It is accompanied by 3 other subculture, i.e. Cirebonese (around Cirebon City), Betawinese (Jakarta City) and Bantenese (Serang City). This region comprises geomorphologically from mountainous to coastal plain area. It implies to the characteristic of culture for every community including the development of local languages. This paper is aimed to map the relationship of local languages with their geomorphological conditions in the study area. Sundanese people commonly speak humble in polite manner and live on mountainous to hilly area. The Cirebonese speaks rather Javanese combined with impolite Sundanese and lives on the northern Java coastal plain as transition area between Sundanese and Javanese. Betawinese speak rather impolite and live on the coastal plain around Gulf of Jakarta. Bantenese speak rather impolite and live on coastal plain to gentle hilly area. This result suggests that there is relationship between the utterances of people with the nature they live on Java.

But, what is important in the culture and people in different regions can be known with their culture.

Putamic's Growth of civilization in Mesopotamia as an infrastructure for geographic space, growth of the Chinese nation from the cultural center in the valley "Wei" as a geomorphological place are suitable issues for such analyses. Geographers have examined culture in different ways, e.g. dividing the world into major cultural areas (Russell, 1951), a study on development of cultures and subcultures, mapping *focal* or *peripheral* areas of cultures (Mobing, 1965), a study on Cultural Islands is the significant examples.

Ahmadi(2011) stated that the cultural perspectives can be considered as the most valuable research means in geographical studies, because such perspectives can differentiate various geographic places from each other, and display how human communities can exploit from natural environments. In other words, cultural ability and the technological limits in human communities can be only reflected in their cultural perspectives. On the other hand, the most scientific form of geographic investigations can be possible in case the researcher can study the natural and cultural perspectives based on their mutual relationship, and finally represent his deductions together with formulation of general instructions and rules in local and regional forms (Shokoei, 1994, p. 23). Hence, it can state that cultural study at any region is the most common way on how to recognize and evaluate the geographic environments, because the practical necessity of human communities to indicators of a behavioral and ethical rule can be differentiated based on their culture, so that their culture can be defined by their ethical and behavioral customs, and this can be the best way to define nations.



Image 1-2. Role of access narrow pass derived from geomorphology in Roofs of houses in wedding party (horaman villages, Paveh County, Kermanshah Province)

The third model (cultures are the result from the long relationship between human and the land)

This model has been taken from theory of Carl Savar, professor at the *University of California at Berkeley*. Savar is a leading American geographer in cultural studies. He has conducted interesting investigations in the context of recognizing current status of cultural perspectives which are resulted from long relationship between human and the land. He believes that each geographic region inspires its characteristics from geographic environment, ideological system, social organizations, facilities and technology (Shokoei, 1994, p. 60). Hence, natural environment can be considered as one of the parameters which affect human's cultural and social activities. Nevertheless, geomorphology as previously referred as a structural mosaic of natural environment, can affect all the social and cultural activities of human. In Savar's studies, activities, man-made effects and human's performance are drawn into attention, so that he has focused on paradigm of geomorphologic perspectives. Hence, geomorphology can be considered as an infrastructure for morphology at any region, and its effects must be considered effective in human activities over the time. To confirm this, it must know that Savar has used the cultural components in landforms in mapping the scenario for cultural geography. Here, the samples from the results for the long relationship between human and land which has intervened in type of "housing and architecture" as a symbol of human culture, are stated by foreign researchers.

Saman Heydari (2007) in a study entitled "The impact of geology and geomorphology on cave and rockshelter archaeological site formation, preservation, and distribution in the Zagros mountains of Iran" This paper is a first attempt to explore the impact of geological and geomorphological settings on formation processes of shelter sites in the karstic Zagros Mountains of Iran. In general, the Zagros Mountains can be divided geologically and geomorphologically into two main zones, highland and folded, which are located parallel to each other and run from the northeast to the southwest in western Iran. Both the geological and geomorphological zones have implications for the formation processes of archaeological deposits at shelter sites. These environmental differences also influence the preservation of archaeological deposits at these types of sites. It is suggested that apart from site formation and post-depositional processes, the local geological and geomorphological structure might also have had some influence on the distribution of prehistoric sites in the region (Heydari, 2007, 22).

panizza and piacente (2008) in a study entitled "Geomorphology and cultural heritage in coastal environments", stated that Cultural Geomorphology is the discipline that studies the geomorphological component of a territory, which embodies both a cultural feature of the landscape and its interactions with cultural heritage (archaeological, historical, architectonic etc.). The relationships between Geomorphology and the cultural elements can be considered schematically according to two reciprocally-integrated viewpoints: Geomorphology meant as a component of a territory's cultural heritage (geomorphosites); the relationships between some cultural components (in a strict sense) of a territory (archaeological, historical, architectonic assets etc.) and the geomorphological context in which they are inserted. These viewpoints are illustrated by selected examples in coastal regions. These concepts can be extended to all the fields of Earth Sciences (Cultural Geology), based on Geodiversity and Geohistory. In conclusion, an effort should be made to give an answer to the ever-felt need for «neo-humanistic» culture, that is for the integration of various fields of culture (panizza, piacente, 2008, 31).



Image 3. Maximum consistency with ecosystem and exploitation from it (Hajij village, Paveh County, Kermanshah Province)

The fourth model (Gestalt psychology paradigm)

Gestalt is the name of a school in psychology and also the name for a small group of German psychologists who followed this school at 20th century, and have considered Max Vériter's theory as the basis of their affairs. Gestalt implies configuration or form in German. The psychologists of this school believe that an organism adds something to our experience which cannot be seen in sensory data. According to this school, the phenomena differ from the elements which develop the phenomena (Seif, 2010, p. 292). According to this theory, we experience the world in meaningful wholes, and we do not see the separated drivers, and what we see are those drivers which have been developed in the organizations (Gestalts) and inspire the meaningful wholes to us. Further, with regard to this theory, the whole is something beyond the sum of its components. The main idea in this theory lies on a fact that the phenomena differ from the elements which form the phenomena. This study which aims to examine human culture and how it is affected by geomorphology has used the theory of Gestalt as a theoretical paradigm. This requires transfer of concepts from psychology area to the geomorphology area. As stated, the phenomena differ from the elements which form them; in other words, elements and components which form the sensory phenomena differ from the phenomena. Considering this theory in a paradigm, it can say that geomorphological components as the elements of mosaic in a natural environment can be followed by various deductive outcomes on our cultural behaviors. As the environmental elements which are dependant to the geomorphology of a region (Temperature, rainfall, elevation, slope, the air pressure) can affect the cultural indicators of humann including social behavior, sexual behavior, food, clothes, housing and so forth, thus it can state that what can be resulted from geomorphology differs from its geogrphical body, that is, the effect of an organized set from the components of geomorphology on human's institutionalized behavior which is culture.

5. Conclusions

As it is clear that culture is a subject which is influenced of various components governing the human communities such as politics, economics, ideology and so forth, each of these factors can come effective in formation and evolution of culture. In this study, the role of these components on culture followed by confirming effects of geomorphology on human culture has been emphasized; to support this idea, it can say that geomorphology at any region is considered as the building structure in geographical space for the main purpose of evolution of cultures.

This infratcuture can play a major role in evolution of cultures, of which the indicaotrs such as the amount of slope, the amount of height, mountains, beaches and so forth exist in geomorphological perspective at a region so that each of them can conduct the human's cultural and behavioral activities. For instance, straits in slope cause emergence of stepped tissue, narrow alleys and dominance of residential houses, so that each of these factors might come effective in social interactions and face- to-face encounter, and finally on how to raise up the children; in this regard, it can say that type of people's clothes in

mountainous areas in the studied region totally adapt with the prevailing temperature and weather during the year. This status by comparing *loose white* garments in Southern parts of the country which are considered to cope with the disturbing temperature at that region can be well understood. According to what mentioned above, it can observe that the parameters of natural environment can affect type and range of social and behavioral activities which form the fundamentals of human cultural behaviors. For this, the role of geomorphology as the sustainable factor in natural environment is of importance in development and diversity of environmental parameters, as all the environmental components relatively are in consistenet with the basic structure of natural geomorphic component governing the region.

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